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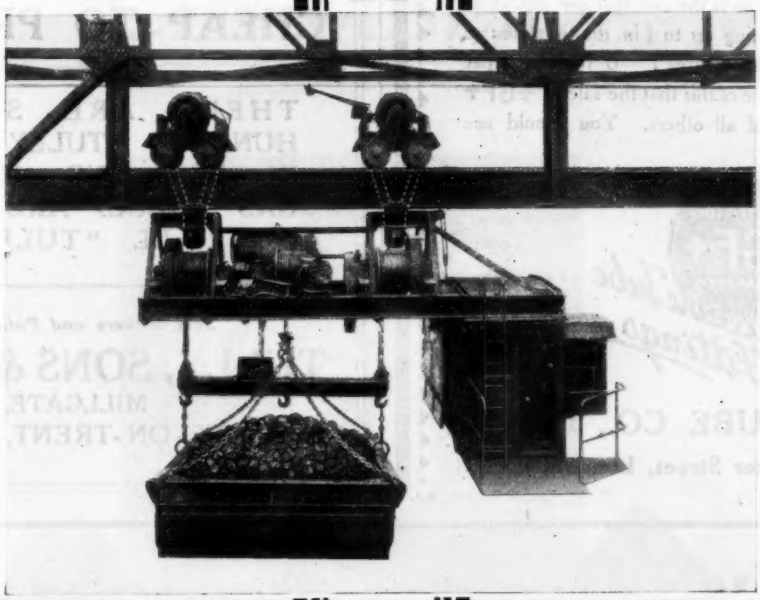

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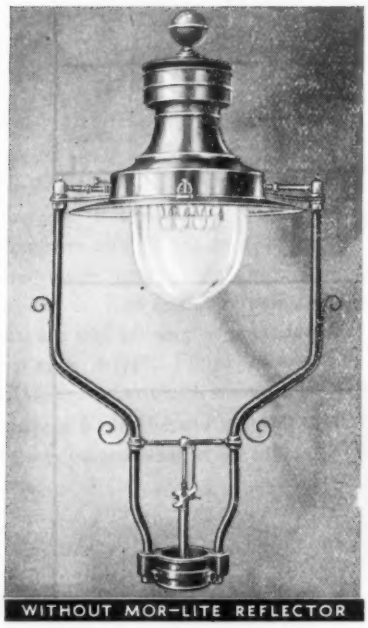

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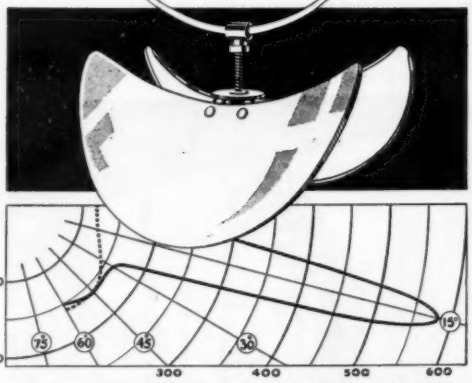

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GRAPH SHOWING POLAR CURVE COMPARISONS FOR TWO LIGHT LAMP

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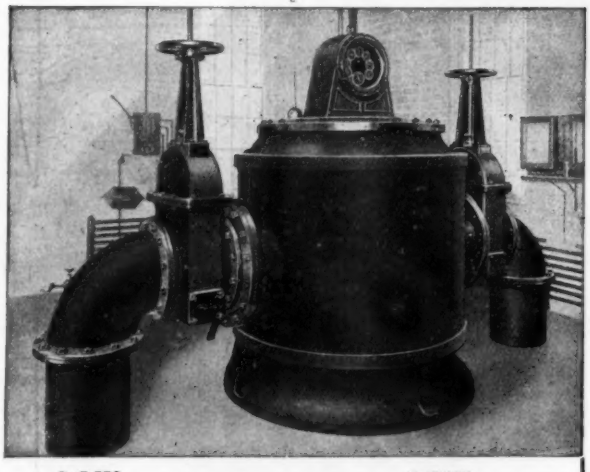

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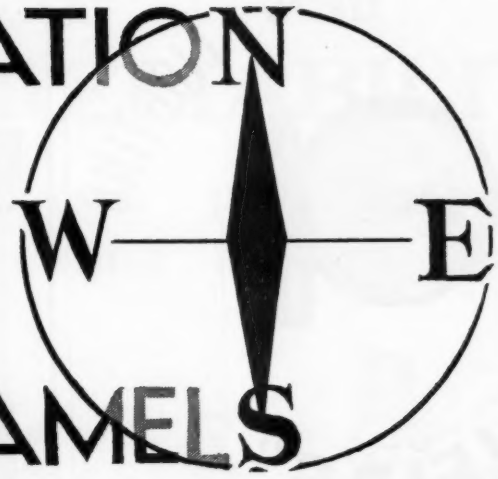

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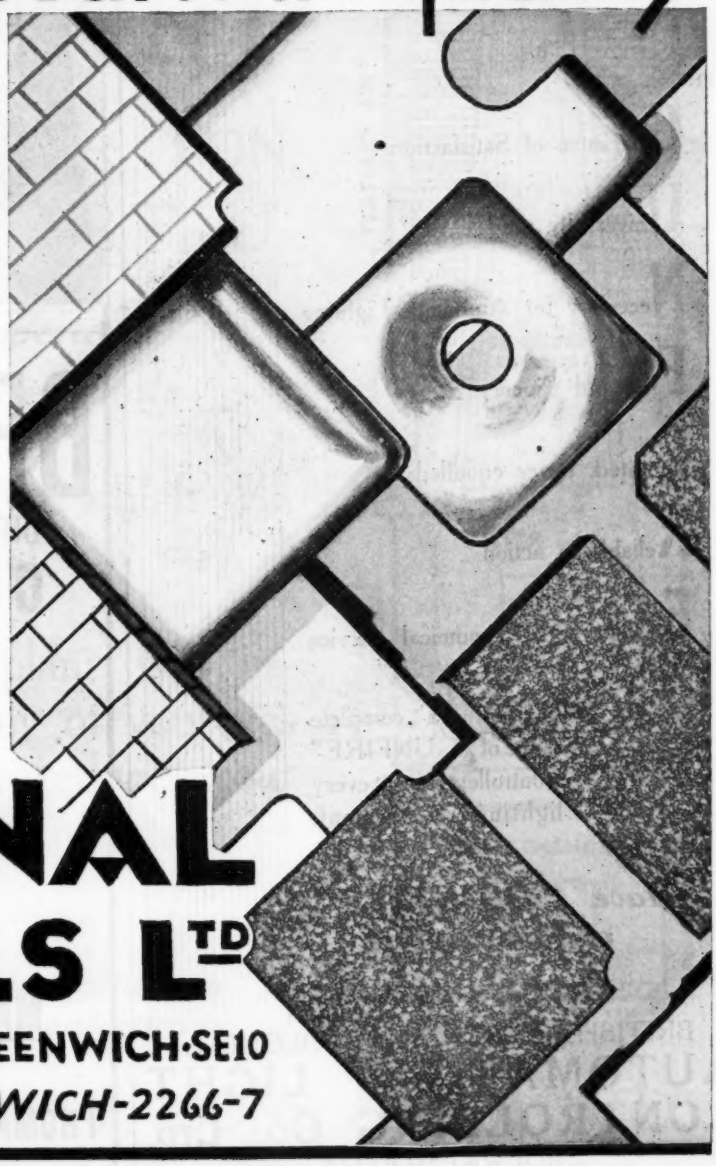

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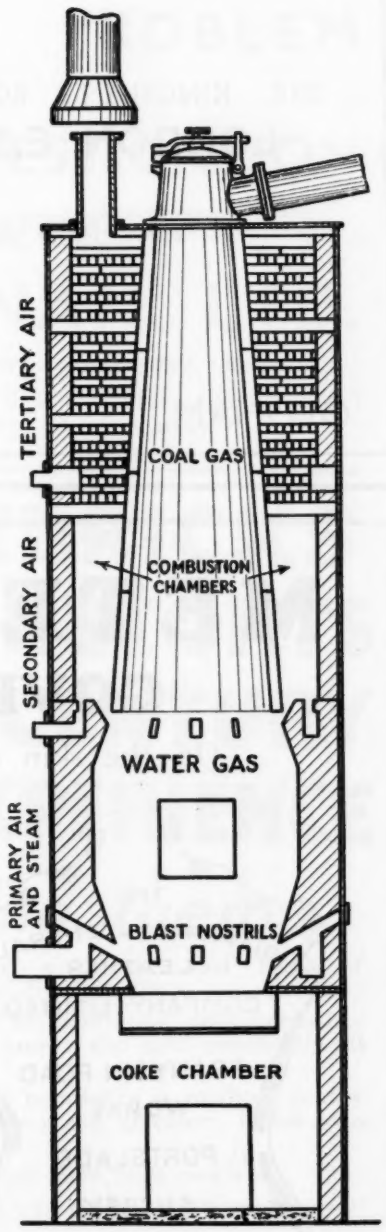

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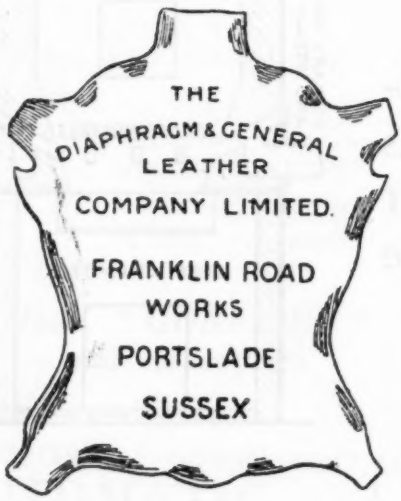

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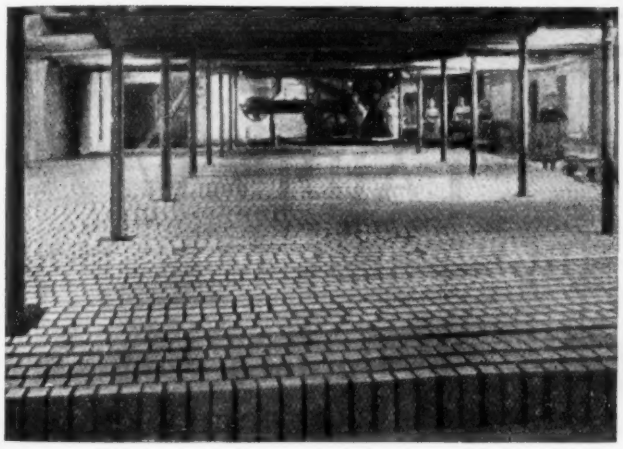

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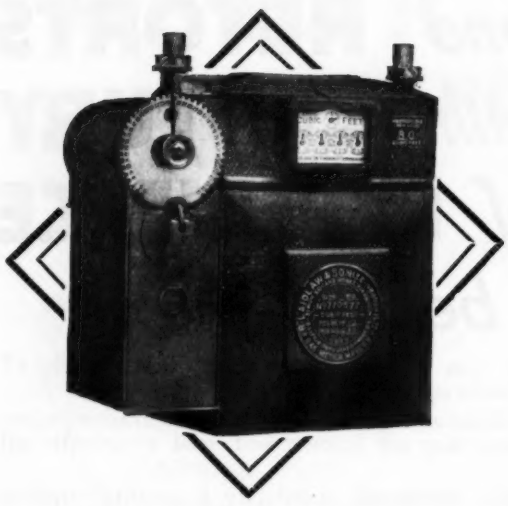

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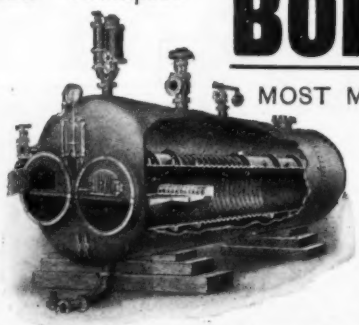

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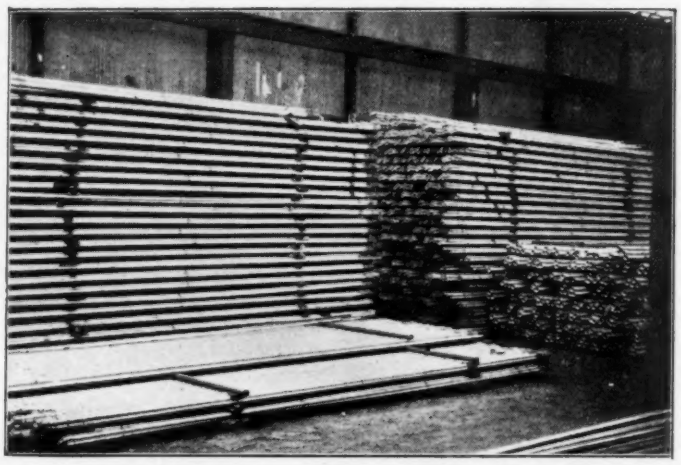

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Fig. 105

Fig. 256

Fig. 257

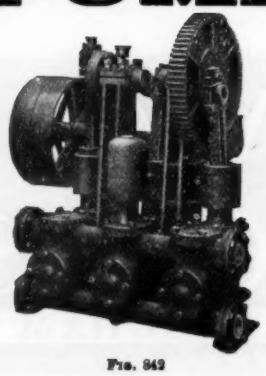


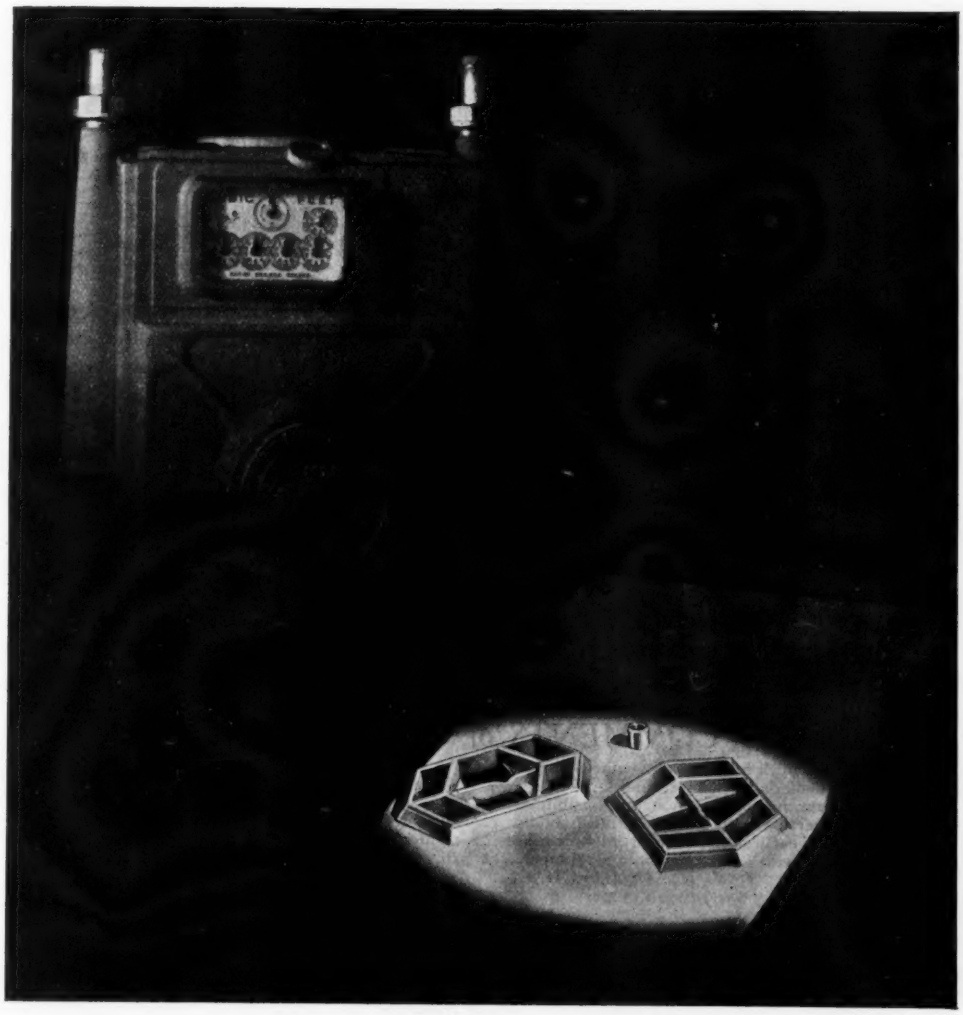
Fig. 242

Fig. 187

Fig. 69

Fig. 284

THE SLIDE VALVE OF THE "FLEXIBLE OUTPUT METER"



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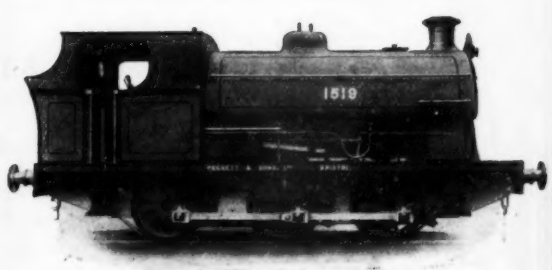

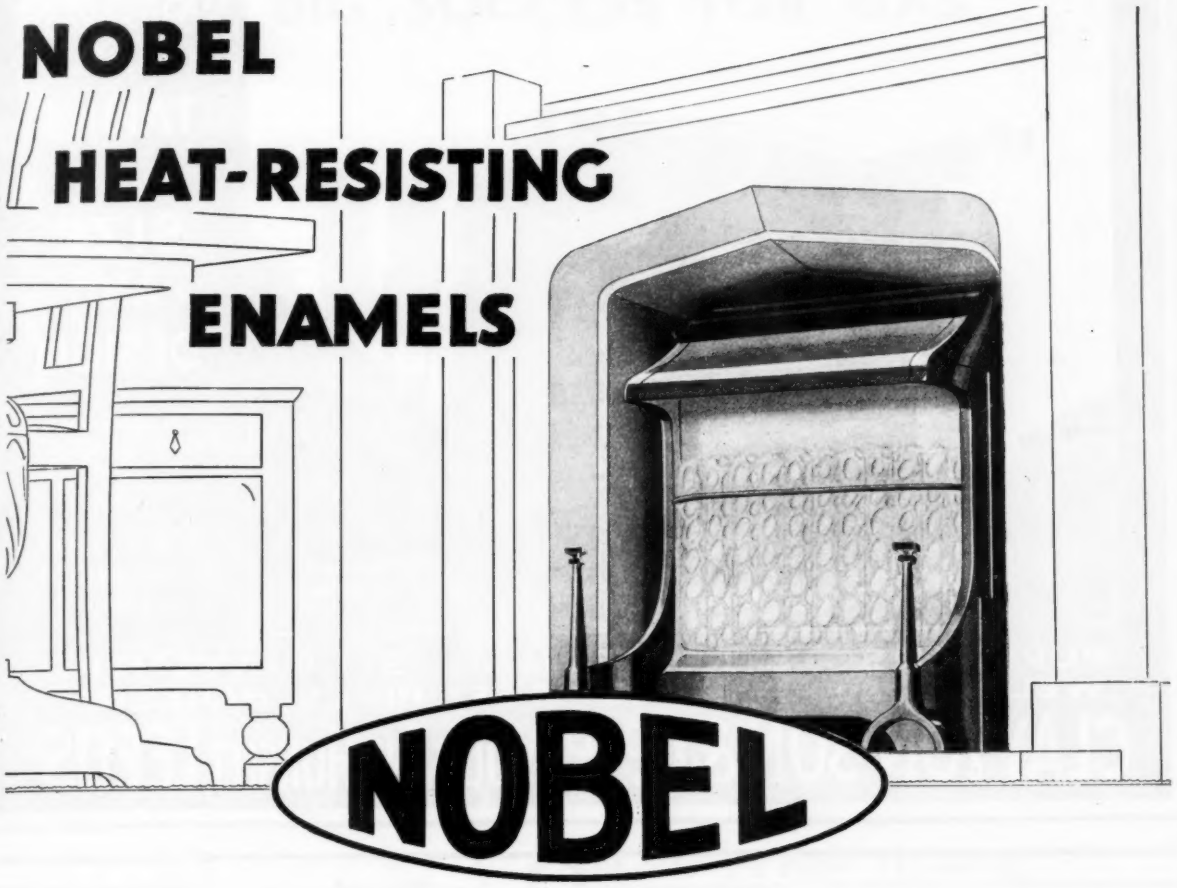

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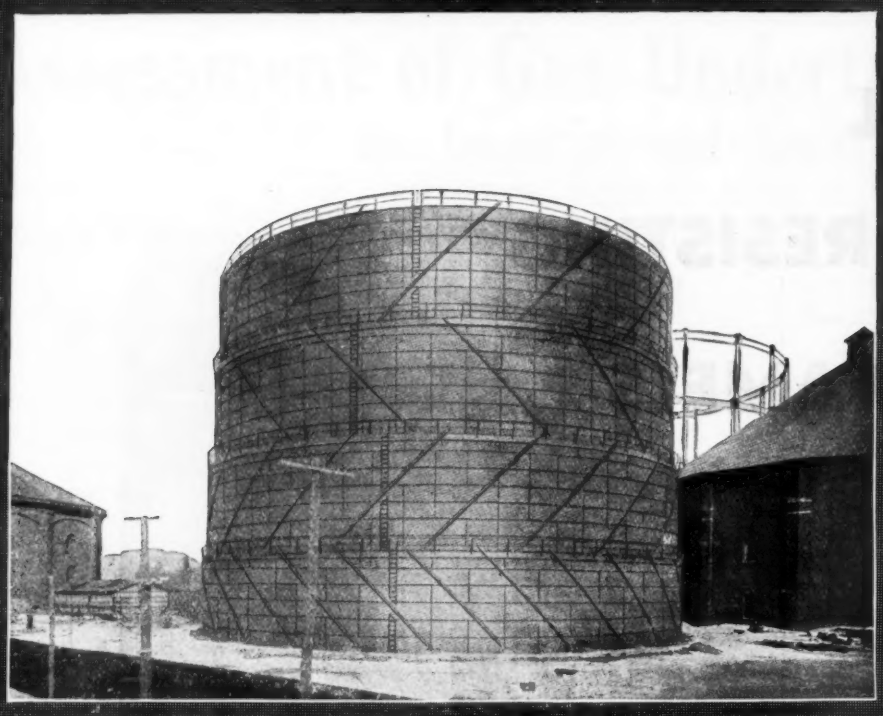

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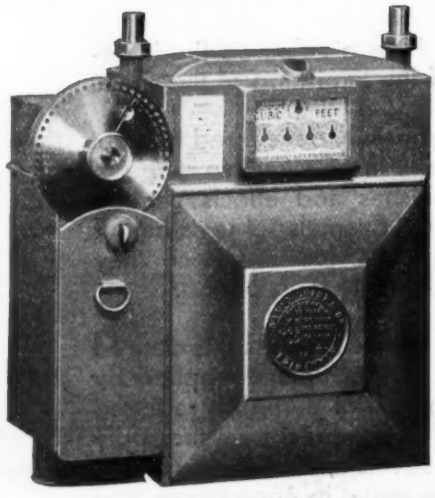

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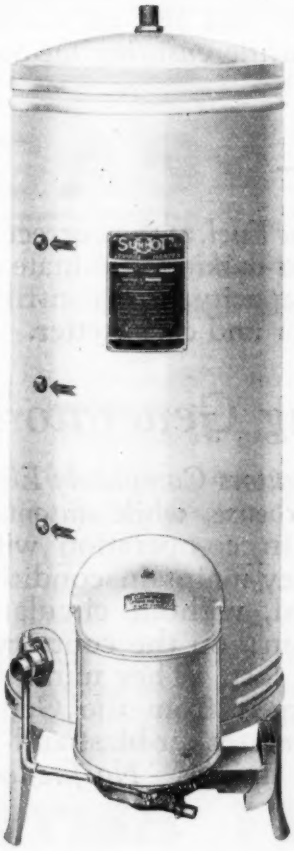

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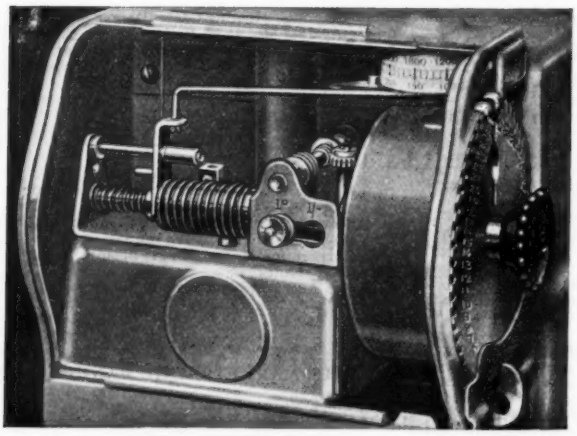

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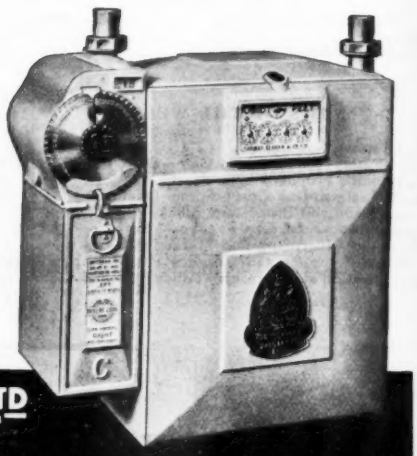

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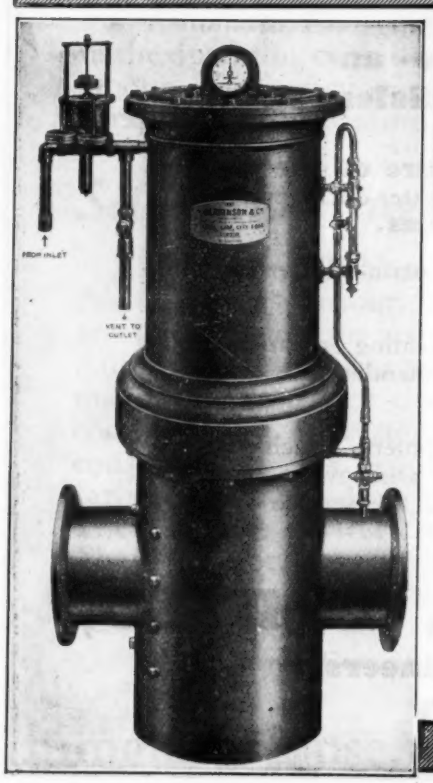

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THE GAS JOURNAL

JULY 26, 1933

Vol. 203. 85th Year No. 3662

A Glance at the Contents—

Coke Salesman Required.

The South Suburban Gas Company invite applications for the position of coke salesman at a commencing salary of £400 per annum. [p. 220.]

Control of Charges and Profits.

In a paper before the International Congress on Accountancy, Mr. William Cash, F.C.A., President of the B.C.G.A., dealt with the subject of control of charges and profits of statutory undertakings. [p. 205.]

Coke Handling and Grading Plant at Beckton.

Mr. Ernest Brown, M.C., M.P., on Wednesday last started a new coke handling and grading plant which the Gas Light and Coke Company have installed at Beckton, at an approximate cost of £250,000. [p. 197.]

Advertising and World Recovery.

Speaking at a Session organized by the Incorporated Sales Managers' Association at the Advertising and Marketing Convention, Sir Francis Goodenough emphasized that to improve our methods of marketing our goods and services is one of the most important problems of these difficult times for British Trade. [p. 207.]

Assistant Gas Engineer Wanted.

Applications are invited for the position of Assistant Gas Engineer to the County Borough of Wigan at a commencing salary of £340 per annum. [p. 220.]

Leamington Hotel Adopts Extensive Gas Installation.

In the course of re-organizing the Manor House Hotel, Leamington Spa, a large amount of gas apparatus, both for cooking purposes and for bedroom heating, has been installed. [p. 209.]

William Murdoch Memorial Tablet.

Exactly twenty years ago, on July 26, 1913, the bronze memorial tablet to William Murdoch fixed upon the wall of the house in which he was born was unveiled. A photograph reproduced to-day was taken outside Bello Mill, Lugar, on that occasion. [p. 208.]

Petrol from Coal.

In the course of an address delivered at a luncheon on Monday of this week, Col. W. A. Bristow, Chairman of Low-Temperature Carbonisation, Ltd., made some interesting remarks upon the subject of the production of petrol from coal by hydrogenation and low-temperature carbonization. [p. 211.]

Forthcoming Engagements

Aug. 15.—IRISH ASSOCIATION.—Annual Meeting at Waterford.

Sept. 4-7.—ASSOCIATION OF PUBLIC LIGHTING ENGINEERS.—Tenth Annual Meeting and Conference at Margate.

Sept. 7.—NORTH BRITISH ASSOCIATION.—Annual Meeting in Paisley.

Sept. 21.—WALES AND MONMOUTHSHIRE ASSOCIATION.—Meeting at Porthcawl.

Nov. 7-8.—I.G.E.—Autumn Research Meeting.

A NEW "JOURNAL" PUBLICATION.

Special attention is directed to the announcement, among the Editorial Notes, of early publication of "pointers" to the Technical Articles which appeared in the "JOURNAL" during 1932.

EDITORIAL NOTES

World Power Conference in Scandinavia

THE conclusion has now been reached of the 1933 Sectional Meeting of the World Power Conference. On this occasion the Conference has been held in Scandinavia—Denmark, Sweden, and Norway each playing her part in the organization. We have already become accustomed to find the deliberations and arrangements of these World Power Conferences somewhat "heavy weather" for the mere journalist who is called upon to portray to his readers the scope and results of the meetings. The programme of the present Conference, therefore, caused some anxiety, when we read that not only was the Conference to take place in three countries, but that, in addition, it was linked-up with "the first International Congress on Large Dams."

However, as on previous occasions, the success of the Conference has been regarded as being almost of national significance to the country acting as host, and Denmark, Norway, and Sweden have maintained the high level of hospitality and organization which have become associated with these Conferences in other lands. Official Government delegates from many countries attended the meetings in Scandinavia. The British Government was officially represented by Mr. Alan Chorlton, M.P., President of the Institution of Mechanical Engineers, and by Dr. F. S. Sinnatt, Director of Fuel Research. A large deputation attended the Conference from this country—the Gas Industry being represented by Sir David Milne-Watson, Dr. E. W. Smith, Mr. E. J. Fottrell, and others.

Scanning the programme, we find that the Conference was opened by His Royal Highness the Crown Prince of Denmark, in the Parliament Hall at Copenhagen, on June 26, speeches of reply being made, among others, by His Excellency Oskar von Miller, President of the Conference, and Mr. D. N. Dunlop, the Chairman of the International Executive Council of the World Power Conference. The following day was occupied in industrial visits in Denmark. The official inauguration of the Technical Sessions of the Conference took place at Stockholm on June 28, the next week being devoted to the various Sectional Meetings. The members of the Conference travelled on to Norway on July 6, and completed their industrial tour a week later. Although, according to the photographic index of delegates, there were many hundreds present at the starting post, we imagine that by the finish the demands of business must have recalled many. But for those who stayed the course, it must have been an instructive and fascinating tour.

The discussions at the Technical Sessions were grouped under nine sections, but the common underlying theme was the supply and distribution of energy in its various forms, whether as fuel, heat, or means of transport. From the hundreds of papers presented we can mention but a few points, taking advantage of the General Reports prepared to cover each group of papers. Section 1B met to discuss the supply and transmission of gas to industry. Seven papers were presented—three from Germany, and one each from Belgium, America, Czechoslovakia, and Great Britain. The statement is made in the General Report that very active development is going on in the Gas Industry throughout the world, and that still greater progress in the field of gas combustion may be hoped for in the near future, by reason of the extensive research and experimental work regarding the utilization of gas for different purposes at present taking place in various countries.

Long-Distance Supply of Gas

THE papers from America and Germany indicate that the difficulties in connection with high gas pressures for distribution have been overcome, and that gas is now conveyed on a very large scale over great distances at pressures as high as 450-600 lbs. per sq. in. It is made clear, however, that so far the questions in connection with long-distance transmission of gas are only of real interest to certain districts in the world where gas is either present in a natural state or else is produced as a bye-product of other manufacturing processes. The Belgian technicians call attention to the advantage of regulating the heat value of coke oven gas before distribution, by the addition of water gas or producer gas. At the same time, it has to be remembered that the limit for economic transportation of gas is closely related to the heat value and density of the gas, in such a way that a gas of high heat value, which as a rule also possesses a low specific gravity, may be transmitted over a longer distance with better economy than a gas of less heat value and higher density. A point which caused much discussion was the economic limit as regards distance for transportation of gas. According to the paper presented by Dr. E. W. Smith on "Long-Distance Gas Transmission in England"—a paper summarizing the work of the Area Gas Supply Committee—the economic limit for the transmission of coke oven gas under the conditions prevailing round Sheffield is about 20 miles. In the Rhenisch-Westphalian district in Germany it is considered that this limit is not reached until about 95 miles. In Belgium transmission up to 40 miles seems to be deemed profitable. The solution to this apparent anomaly was made clear in the discussion.

In Great Britain the economic limit was governed by the fact that both coke and gas had to be distributed from the coke ovens, and further that the gas was to be sold at a price to make it acceptable as an industrial fuel. In Germany, the coke ovens being situated at steelworks, there was no cost for distribution of coke. Further, in both Germany and Belgium quite a considerable proportion of the gas from the long-distance transmission schemes was made available for town use. The moral is that every distribution scheme must be considered in the light of fundamental data, and that no broad statement as to value of long-distance transmission can be made.

The Form Value of Gas

ANOTHER subject which received attention in the Gas Section was the "form value" of gas, and the conclusion was reached that the authors rather differ in their views as to the possibilities of gas as a fuel in competition with other fuels. The General Reporter, Mr. E. Gustafson, gives some interesting figures on the subject of coke-fired hot water boilers, the efficiency of which he feels is generally under-estimated. Tests made by the City Gas-Works of Stockholm on ordinary hot water boilers for the heating of apartment houses (which have been carried out over a period of years) have shown that the average efficiency during the whole period of heating is 82·8% when using coke specially selected for such boilers, against 83·4% with oil firing, and 83·8% with

coal firing in boilers specially adapted for these fuels. The conclusion is reached that " good, normally operating hot water boilers, fired with coke of a proper size, and with normal supervision, will, as an average over a year's heating, show a working efficiency of about 81%." If this be the case on coke-fired hot water boilers in Great Britain, then the gas-fired boilers have certainly a difficult problem to face to become " all square " on cost.

On the other hand, the Conference was confident that developments in the furnace field were leading to important future outlets for gas. Mr. Coriolis, in his paper on " Recent Industrial Gas Development in U.S.A.," makes reference to the " diffusion combustion " method of heating, which, he claims, has had important results in fuel economy. According to this method, gas and air are forced into the combustion chamber of the furnace in two parallel streams, brought into contact with a minimum of turbulence, so that combustion may proceed by means of diffusion in the contact zone between the streams. The hydrocarbons in the gas are decomposed by the formation of free molecular carbon. This causes the whole flame to become luminous and highly radiant, by which a greatly increased smelting speed is attained. In cement kilns it is stated that it is possible to get about 15% less heat consumption with gas than with coal, against formerly 10% higher consumption for this first-named fuel. A further advance has been the introduction of the controlled atmosphere furnace. Tests sponsored by the American Gas Association regarding the decarburizing of steel in heat-treating have led to a general adoption of controlled atmosphere furnaces for the prevention of decarburizing and scale formation in heating, forging, and so on. Coupled with the continuous method of operating furnaces, gas firing has taken a large hold on American industry.

Turning from the use of gas to the use of electricity, we note that Section 5 was devoted to electrical heating. Here, again, we observe intense activity in satisfying the needs of industry as regards heat treatment processes. The General Report summarizes the position by remarking that electric furnaces will assume a very important rôle in most of the heat-consuming industries. According to this Report, the employment of electricity for heat purposes had to overcome considerable apprehension in the beginning. " It was quite natural that it should be considered well-nigh impossible to convert such a *noble* form of energy as electricity into such a low grade form as heat energy with any degree of economy." The italics are ours. Plain Mr. Therm, the housewife's friend, will have to look to his laurels. Lord Watt-hour has decided to try his hand in the domestic field !

Space will not permit us to take our readers further with us through the Scandinavian sea of papers. So we leave the Conference with the happy thought that, even if delegates from many nations find it difficult to agree on monetary and economic problems, when the delegates discuss fuel and power problems they find a similarity of outlook and endeavour that transcends nationalistic considerations, which, in the beginning, was the basic thought for holding these World Power Conferences.

" Beckton Koks "

By way of explanation of the above title, it may be remarked that it is now many years since coke from the Beckton Works first found a market in Europe, and the big sky-signs to be seen in Norway and Denmark—" Beckton Koks "—pay tribute to its excellence. " Beckton Koks " were specially in evidence last Wednesday, when the River Thames was seen at its best—on a sunny summer day—and when a large party of invited guests and officials of the Gas Light and Coke Company proceeded, at the invitation of the Governor and Directors, in two boats kindly placed at their disposal by the Port of London Authority, from Westminster to witness the formal inauguration by the Secretary of Mines (Mr. Ernest Brown, M.C., M.P.) of new coke handling plant at the Beckton Works. Everything went with the most perfect smoothness—right down from the gigantic plant itself onward from the moment when it was set in operation, to the smallest detail contributing to the success of the day's arrangements. The Minister of Mines is obviously a shrewd business man, possessing real sympathy with the coal industry and a clear understanding of the light in which that industry should regard the great Gas Industry. He sees the folly of coal looking upon gas—its unrivalled customer—as a competitor. The Gas Industry, as he says, is one upon which a Minister of Mines is bound to keep a kindly eye. This is certainly as it should be.

The scheme inaugurated last week was the third of a series of big additions made in recent years to the Beckton Gas-Works. In July, 1926, a huge coal handling plant was started by His Majesty the King, and this was followed in May last year by the opening by the Prince of Wales of a battery of Koppers coke ovens capable of dealing with 1200 tons of coal a day, and costing more than £1,000,000. Now the cycle has been completed by the bringing into commission of this magnificent new coke handling and grading plant, designed by the Chief Engineer's Department of the Company, and embodying the results of experience gained at the other stations. This plant has been erected at a cost of £250,000, and it will deal with over a million tons of coke a year. We are reproducing on later pages some remarkable photographs indicating the magnitude of the

There will be published from these Offices next week, at the price of 3s. 6d., post free, " A Technical Signpost " to the " Gas Journal " Volumes of 1932. The 48 pp. of the book will be handsomely bound in limp blue canvas with gold lettering. Its object and its scope are explained in a Foreword which we reproduce here.

A leading Engineer and student of gas affairs some years ago expressed the wish that we of Bolt Court, Fleet Street, might voyage the South Seas the while the Gas Industry overtook the accumulating mass of technical information offered in its " JOURNAL." We could not oblige, but intensified our efforts to make the paper equally acceptable to the cover-to-cover reader and to those whose time and interests are best served by skimming over the surface of gas affairs. We can claim that our efforts were successful, and that the weekly " JOURNAL " is a model of " readability; " but there remained the problem of those who wanted to refer to the " particular article published some time," and were confronted with the row of quarterly volumes of 700 to 900 pages each. From among them arose a champion in Mr. R. H. Ruthven, of Ramsgate, who, in his Presidential Address to the Southern Association in 1932, referred

> *" . . . to the wealth of technical information that is made available to us by all the investigators in our own and allied industries. The total amount of work represented must be stupendous. These papers are beautifully reprinted, complete with charts, photographs, and so on by our splendid Technical Press. We do our best, perhaps, to avoid losing sight of some of the information by filing extracts. For a number of years the ' JOURNAL ' published ' The Gas Chemists' Summary,' by Mr. A. V. Hendrickson. In an admirable manner Mr. Hendrickson summarized the technical papers published during the year. A glance from the index to the Summary and the information required was to hand—as a rule. Is it not possible to revive the idea? "*

The idea was revived, and in the following June appeared " A Technical Signpost," first of a series of quarterly articles which the Editor felt " should be of much use to busy travellers on the great highway of the Gas Industry."

This booklet is a reprint of the four articles which covered the year 1932, with marginal annotations and references and a suitable index; and the Publishers trust that in this form the Signpost and succeeding ones along the road may prove sure guides to many odd corners sought among the volumes on the shelf.

Orders and inquiries to Walter King, Limited, 11 Bolt Court, Fleet Street, London, E.C. 4.

plant, in which there have been utilized two and three-quarter miles of rubber belting for conveying the coke, while the belting travels on 10,000 rollers. The new system is speedy and economical, and assists to keep the coke from breaking and powdering up into breeze, especially when ships are being loaded.

This enterprise on the part of the largest and oldest Gas Company in the world should serve to bestow added emphasis upon an inseparable portion of the business of the Gas Industry—the supply of coke for domestic and industrial purposes. It points to the fact that the requirements of both classes of consumer must be unceasingly studied and met, if the fullest measure of success is to be reaped. With service of the highest order, better trade should spell larger industrial demand; while as for the domestic load, it is not beyond the bounds of reason to urge that there must be a practically unlimited field for a smokeless solid fuel that is " right " in quality and handled with the maximum efficiency.

The Assessment of Gas Undertakings

On another page of this issue will be found an advertisement of Seymour's " Principles and Practice of the Assessment of Gas Undertakings for Imperial and Local Taxation," which was recently re-published with an up-to-date Supplement.

This standard work is now well known in the Gas Industry, and pending the revision and codification of the Income-Tax Law (by a Government Committee which was appointed in 1927 and which at this advanced date has only touched the fringe of the subject matter) will remain an invaluable guide to the intricate problems of Income-Tax and Rating which beset the administrative officials of all undertakings, whether company or municipally owned.

The author asks us to state that the contents of the revised edition are entirely unaffected by the Finance Act which received the Royal Assent on June 28; in regard, however, to the assessment of individual taxpayers it is necessary, he adds, to apply the provisions of Section 29 of the Act, which restore the equal instalment method of collection of Schedule D tax in such cases.

Dog or Coal Fire?

Those who, like ourselves, are unceasing in their efforts to secure purer atmospheric conditions in our country's urban areas, will note with interest a suggestion made earlier this week by Col. W. A. Bristow, Chairman of Low-Temperature Carbonisation, Ltd., as reported elsewhere in this number of the " Journal," that every householder wishing to burn raw coal for domestic purposes should be required to take out an annual licence at the Post Office, and that it should be an offence to supply coal to any unlicensed person or premises. As he quite fairly argued, if we have to pay 7s. 6d. to keep a dog—the friend of man—why should we not pay 2s. 6d. or 5s. for the privilege of discharging into the atmosphere soot and smoke—the enemy of man? If there is a fault to be found with this reasoning, it is that the amount for the licence is placed far too low. For inflicting upon the community such damage as coal smoke inflicts, we would rather see a heavy penalty than a small licence enforced.

This, however, is by the way. The main object of Col. Bristow's address was to refer to the subject of the production of petrol from coal, as viewed from the angle of low-temperature carbonization. The comparisons he makes are his own, and they will be closely studied at a time when the question of home-produced petrol is so much before the public. It is a question which, as the Minister of Mines pointed out at Beckton, and as the Financial Secretary to the Treasury emphasized in the House of Commons on Monday night, is of interest to the carbonizing industries, inasmuch as the guaranteed preference is not limited to spirit produced by hydrogenation.

PERSONAL

MR. H. H. GRACIE'S RETIREMENT.

Mr. H. H. Gracie, Engineer and Manager of the Edinburgh Corporation Gas Department, made his last appearance on July 21 at a meeting of the Public Utilities Committee of the Town Council before his retirement.

Councillor Aldridge, who presided, paid tribute to Mr. Gracie. He said that Mr. Gracie had given 44 years' service to the City, and had seen the works at Granton rise from nothing to the great and model works that they were to-day. The Committee wished him every prosperity in his retirement.

Mr. Gracie, in reply, acknowledged the work of his staff and in particular that of his successor, Mr. J. Jamieson, and also the helpful co-operation of the Councillors and the city officials.

During his term of service, he said, the works at Granton had grown to be seven times as large as they were in 1888. During the last dozen years the output had been increased by 1000 million c.ft., and that was being done with less coal.

* * *

ALDERMAN F. J. WEST TO BE CHAIRMAN OF MANCHESTER SHIP CANAL.

Alderman F. J. West has accepted the invitation of the Directors elected by the shareholders to succeed Mr. Alfred Watkin as Chairman of the Manchester Ship Canal Company from November. Alderman West, having resigned his position as a Director appointed by the Corporation, has been elected to the vacant seat on the Board as one of the Directors elected by the shareholders.

Mr. Watkin, at the unanimous request of his colleagues, has consented to remain in office until Oct. 31, after which he will retain his seat on the Board.

* * *

Dr. G. E. Foxwell has accepted the appointment of London Manager to Messrs. Clayton, Son, & Co., Ltd., of Leeds, manufacturers of gasholders, gas plant, pipes, boilers, &c. Messrs. Clayton's London Office will continue to be at 5, Victoria Street, as hitherto (Tel. No. Victoria 6070). Dr. Foxwell, who has been in the carbonizing industries for over twenty years, will not relinquish his Consulting practice.

* * *

Mr. David Robertson, of Clutha Hill, Dunoon, who was for many years Manager of Dunoon Gas-Works and is now Consulting Engineer to the Dunoon Town Council, has been appointed a Justice of the Peace for the County of Argyll.

* * *

To mark his 25th anniversary as Secretary of the Uxbridge, Maidenhead, Wycombe and District Gas Company, the office staff presented Mr. George J. Bristow with a silver cigarette case. Mr. Bristow has been associated with the Company many more than 25 years, being assistant to the late Mr. W. M. Gardiner, whom he succeeded as Secretary.

* * *

Mr. William L. Howe, of the Industrial Department of the Stretford and District Gas Board, has been appointed Consumers' Technical Adviser to the City of Nottingham Gas Department, which position was recently advertised in these columns. Mr. Howe takes over his new appointment on July 31.

* * *

Mr. Stanley H. Badock, LL.D., J.P., Pro-Chancellor and Treasurer of the University of Bristol, has accepted the office of President of the next Congress of the Royal Sanitary Institute, which is to be held at Bristol from July 9 to 14, 1934.

OBITUARY

AUGUSTINE ROBERT EVEREST.

The death is announced of Mr. A. R. EVEREST, Consulting Engineer for the British Thomson-Houston Company, in the early hours of Saturday, July 15, at his residence, 46, Clifton Road, Rugby. Although he had been in indifferent health for some time, his death came as a great shock to his many friends and acquaintances.

Mr. Everest, who was born at Lymington, Hants, in 1866, received his academic training at King's College, London, studying under Prof. Sylvanus Thompson, and served his apprenticeship at Siemens Brothers & Co., Ltd., Woolwich. In 1887, he joined the engineering staff of the P. & O. Steamship Company, and in this capacity made several journeys to the East and Far East. Two years later he went to America, and entered the service of the Thomson Electric Welding Company, Lynn. In 1896 he joined the Thomson-Houston Company (later General Electric Company, of Schenectady, U.S.A.). He returned to England in 1905 to join the engineering staff of the British Thomson-Houston Company. Until the time of his appointment in 1914 as Consulting Engineer to the Engineering and Manufacturing Departments of this Company at Rugby, Mr. Everest had been Chief Designer of alternating current apparatus, and had also acted as chief adviser in regard to special tests and investigations relating to insulating materials.

Some idea of the wide field of Mr. Everest's activities may be gained from the number of committees on which he served, in several instances acting as Chairman. Among those to which he gave his services may be mentioned the B.E.A.M.A. Standardization Committee; the B.E.A.M.A. Main Research Committee; the Electrical Industry Committee of the British Standards Institution; the B.S.I. Sub-Committee on Electrical Machinery; the Rating Panel of the Sub-Committee on Insulating Oils and Sub-Committee on Oil Switches; the Council of the British Electrical and Allied Industries Research Association; the I.E.E. Wiring Regulations Committee and several Sub-Committees; the International Relations Committee of the I.E.E.; the International Electrotechnical Commission. Mr. Everest was also a member of the I.E.E.; the American I.E.E.; the Faraday Society; the Institute of Radio Engineers; the American Society for Testing Materials; the B.T.H. Apprentice Committee, and the B.E.A.M.A. Education Committee.

His death will be a great loss to the Electrical Engineering Industry and will be felt by a wide circle of friends and acquaintances with whom he worked in close collaboration in his various activities.

THE NEWS OF THE WEEK

Allgemeine Gas Industrie Gesellschaft is the name of a new Company which has lately been formed in Switzerland with a capital of 1,000,000 francs (£40,000 at par), with headquarters at 34 Sihlstrasse, Zurich, for the purpose of establishing and operating gas-works.

Tottenham and District Gas Company.—Dividends in respect of the half-year ended June 30, 1933, have been declared at the following rates, all less income-tax, viz., on the 5% preference stock 5% per annum; on the 5½% preference stock 5½% per annum; on the ordinary stock 6¾% per annum; payable on Aug. 9 next.

Commercial Gas Company's Dividend.—The Directors of the Commercial Gas Company have declared an interim dividend of 2½% (less income-tax) on the ordinary stock of the Company for the half-year to June 30, 1933—payable on Aug. 15. The dividend is at the same rate as that paid for the corresponding half of 1932.

During Guest Week at Blackpool the output of 18,725,000 c.ft. of gas was an increase of 1,902,000 c.ft. on the corresponding week last year, equivalent to an increase of 11·31%. For the four weeks ended July 20 there was an increase of 8,140,000 c.ft. in the output. During June there were 210 new consumers of gas registered.

The Sidmouth Gas Department has in the past laboured under the disadvantage of not having adequate premises as showrooms for the demonstration of apparatus, but this drawback has been removed by the opening on Thursday, July 13, of a new building situated in the High Street and constructed to the design of the Council's surveyor. In opening the premises, which have a threefold purpose, being fire station and library, as well as gas showrooms, the Chairman of the Council expressed the opinion that it was an unhappy day when the town bought the Gas Undertaking. Replying to this remark, in moving a vote of thanks to the Chairman, Mr. J. G. H. Halse, Chairman of the Gas Committee, pointed out that the Gas Undertaking had helped the rates considerably and that the purchase of the works gave the Council the right to start the electricity undertaking, which had been sold at a profit of £22,000.

Institution of Civil Engineers.—We have received from the Secretary of the Institution of Civil Engineers, Great George Street, Westminster, S.W. 1, the membership list with addresses and other particulars corrected to July 1, 1933.

A Large Party of Scholars from the Brougham Street School, Skipton, who recently visited the local Council's new high-pressure gasholder, were last week taken on a detailed tour of the gas-works proper by Mr. N. B. Thompson, the Gas Engineer, and had every step in the process of gas manufacture explained and illustrated in operation, in addition to which they were told some of the mysteries of bye-product and experimental work. Thanks were expressed to Mr. Thompson by Mr. L. G. Gardiner, the Headmaster of the School.

Deal Sports Club Outing.—Members of the Deal and Walmer Gas Company's Sports Club had a very enjoyable annual outing on July 15 round the cost of East Kent. Leaving the works at 2 p.m., they journeyed through Dover, Folkestone, and Hythe to Ashford, where they had tea, and at which the President of the Club, Mr. J. F. Tyndall, presided. The drive was then resumed to Whitstable and Faversham and on to Margate, where an hour or so was spent. Home was again reached at 11 p.m., where Mr. Whiteside was cordially thanked for the excellent organization of the outing.

Benzole Production at Plymouth.—Mr. J. Clifford Tozer, Chairman of the Gas Committee of the Plymouth Corporation, stated that as yet it was uncertain as to whether the Government preference for home-produced petrol from coal would affect the city Gas Undertaking. He said that the present output of benzole from the local plant was approximately 120,000 gallons a year, and if the special preference of 4d. per gallon was allowed it would represent a saving of approximately £2000 annually. That would be extremely welcome to gas consumers in the Undertaking's area of supply, as it would in all probability be the means of effecting a reduction of 1d. per 1000 c.ft. in the existing price of gas, or, on the other hand, it might involve an important saving to the transport undertaking.

THE NEWS—continued.

By a Three-to-One Majority, a special ratepayers' meeting at Settle, Yorkshire, decided last week in favour of continuing gas lighting for the town's main street instead of a suggested change to electricity. Tenders were offered by the Settle Gas Company and the Settle Electricity Company. The tender for electric lighting was substantially greater than by gas even if the town undertook the entire responsibility of conversion of the lamps and fittings. Mr. J. W. Dales, a member of the local Council and a leading figure in the West Yorkshire Federated Chambers of Trade, expressed the view that the ratepayers were fully satisfied with the service given by the Gas Company and the Council ought to have been able to settle the matter without calling a ratepayers' meeting at all. Other speakers said they felt the Council had had a very fair deal from the Gas Company, and they saw no sort of ground for a change of lighting policy.

The Future of Bottled Gas.

Sir John Cadman's Prophecy.

Speaking at the World's Petroleum Congress at the Royal Institution on July 21, Sir John Cadman, Chairman of the Anglo-Persian Oil Company, suggested that in years to come motor cars may be run on bottled gas.

"Bottled gas," he said, "is better known in the United States than in this country. It consists of propane and butane derived from natural gas, and is sold in cylinders in areas where other suitable fuels are unobtainable.

"Bottled gas has actually been used for the propulsion of motor cars, and at some future time motor cars in this country may commonly use cylinders of coal gas for their fuel."

South-Eastern Gas Corporation.

Offers for Gravesend and Broadstairs Stocks.

The South-Eastern Gas Corporation announces it has made offers to acquire the whole of the issued 7% consolidated stock of the Broadstairs Gas Company, and for the whole of the issued ordinary stock of the Gravesend and Milton Gas Light Company. The terms of the offers are as follows:

For each £100 nominal value 7% consolidated stock of the Broadstairs Company either (*a*) £145 cash, or (*b*) 60 £1 redeemable 4½% Cumulative preference shares of the South-Eastern Gas Corporation, together with 64 £1 ordinary shares in the Corporation, all credited as fully paid.

For each £100 nominal value ordinary stock of the Gravesend and Milton Company either (*a*) £127 10s. cash, or (*b*) 100 ordinary shares of £1 each in the Corporation, credited as fully paid.

These offers are conditional upon acceptance by not less than 55% of the holders of stocks, and will remain open until July 28.

Oxide Purification.

A great deal of benefit has accrued to the Gas Industry by the publication by Messrs. Thos. Duxbury & Co. of a series of excellent booklets on oxide purification for the removal of sulphuretted hydrogen from town gas. The most recent—No. 6—is another example of good technical literature as distinct from mere propaganda; and no gas technologist could fail to find it of value. Through the courtesy of the firm we were able to give advance publication of the contents of the booklet in question in the issues of the "JOURNAL" for June 28 and July 5, 1933.

Gas at the Advertising and Marketing Exhibition.

Through the co-operation of the Gas Light and Coke Company, gas was well represented at the Advertising and Marketing Exhibition, held at Olympia, London, from July 18 to 21.

In the Advertisers' "Ideal Home," where all the contents of a model house comprised well-known and widely advertised goods, gas played its part in various capacities. The dining-room and one of the bedrooms were fitted with attractive "Portcullis" gas fires—an appliance recently introduced by Messrs. Bratt Colbran & Co., which has been referred to in these columns.

In the kitchen an "Alpine" "New World" range in mottled enamel finish, and complete with "Regulo" oven control, served the cooking requirements. In addition, an "Equator" storage heater provided the hot water service.

Other equipment in the kitchen included an "Electrolux" refrigerator, "Permutit" water softener, and "Easiwork" kitchen cabinet.

MR. THERM TO THE FORE.

The Gas Industry's old friend, Mr. Therm, also appeared at the Exhibition among a series of tableaux of well-known advertisements. This tableau, again at the instance of the Gas Light and Coke Company, showed Mr. Therm wearing his usual cheery smile, while a series of changing photographs gave an idea of some of the many activities of the Gas Light and Coke Company.

A posting box was provided in which the public were invited to post cards to Mr. Therm asking for information on any subject in which they were interested, to which Mr. Therm would promptly reply.

Centralization at Aberavon.

Policy Justified.

Mr. E. M. Edwards, Engineer and Manager of the Port Talbot Gas Department, has presented the Gas Committee with some interesting figures justifying the policy of centralization and expenditure on continuous vertical retorts agreed to over a year ago.

The gas sold during the year ended March 31 last was 163,408,000 c.ft.—an increase of 10,157,000 c.ft., equivalent to 6·6%. The gas unaccounted for was 7·4%. The trading results show a gross profit of £14,047 and a net profit of £3843. The year ended March 31, 1932, showed a loss of £925, and the improved figures now obtained justify the progressive policy adopted by the Council. The actual trading results show an improvement of £5555 in comparison with the results of the previous year.

The sale of residuals increased by £305, notwithstanding the fact that the expenditure on coal decreased by £2454. The maintenance of mains and services increased by £698 and the expenditure on meter repairs decreased by £230.

The Committee expressed the view that the policy of centralization at the Aberavon Works (eliminating the old Margam and Cwmavon Gas-Works) recommended by the late Mr. A. J. Bond and completed by Mr. E. M. Edwards, the present Manager, had been fully justified by the results now obtained, and in view of these figures they are to consider a reduction in the price of gas at the November meeting of the Committee.

The recent Gas Exhibition organized by the Manager and patronized by 3500 housewives during the week resulted in sales amounting to £300. The Committee are recommending to the Council an expenditure of £13,060 for extension of gas supplies.

Manchester District Association of Gas Engineers.

Members of the Manchester District Association of Gas Engineers on Friday last visited the reconstructed Higginshaw Gas-Works at Oldham. They were welcomed by the Mayor, Alderman E. Bardsley, J.P., F.R.G.S., Councillor J. Wilkinson, Chairman of the Gas Committee, Councillor J. G. Wilde, Vice-Chairman, and by Mr. F. Greenhalgh, Gas Engineer and Manager. A full description of these works appeared in the "JOURNAL" for May 10.

The visitors were subsequently entertained at luncheon by the Oldham Corporation Gas Committee.

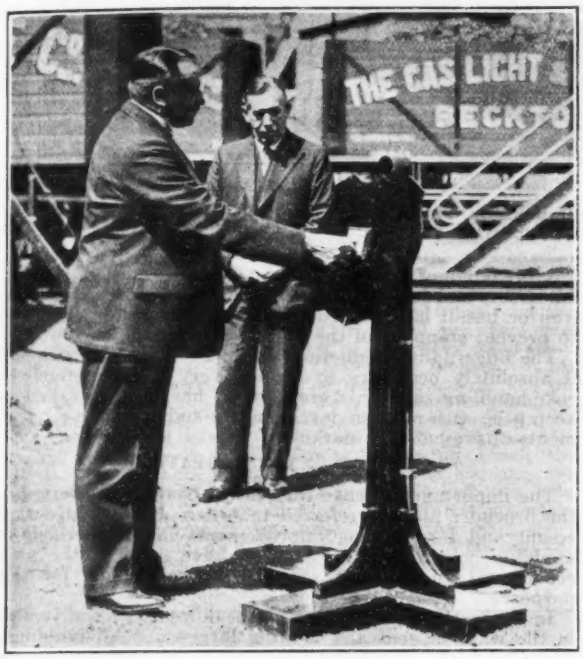
Unfortunately, our report of the proceedings on what proved to be an outstanding occasion has come to hand too late for inclusion in this issue of the "JOURNAL," but a full account will be given next week.

Further News Items will be found on p. 1204.

COKE HANDLING AND GRADING AT BECKTON

New Plant Opened by the Secretary for Mines.

Mr. Ernest Brown, M.C., M.P., on Wednesday last started new coke handling and grading plant which the Gas Light and Coke Company have installed at Beckton, at an approximate cost of £250,000. There has been a complete re-building of the plant for dealing with the coke from the various ovens and retort-houses. The method of loading into ships' holds has been altered to prevent the breaking and chipping of the prepared coke and to reduce the trimming costs. The growing home market for Beckton coke has also been catered for by bringing the methods of railway loading right up-to-date.



Mr. Ernest Brown (Secretary for Mines), at the invitation of Sir David Milne-Watson, who is seen with him, pressing the switch which set in operation the new Coke Handling Plant.

The Minister for Mines sailed from Westminster Bridge by the river launch "St. Katharine" to Beckton, accompanied by the Governor of the Company (Sir David Milne-Watson), the Directors, senior officers, and guests of the Gas Light and Coke Company. On arrival, the Governor said they were very much honoured by the presence of the Minister, who had taken the trouble to come down to open the new plant, which he invited him to inaugurate by operating a switch that would set the plant in motion. During a tour of the works, Mr. Brown saw the coal-handling plant opened some years ago by the King and Queen, and also the £1,000,000 coke ovens, opened last year by the Prince of Wales.

COKE GRADING PLANT.

The plant, which is capable of dealing with over a million tons of coke a year, as explained in a beautifully illustrated brochure prepared for the occasion, consists briefly of:

(1) Belt conveyor system for carrying the coke from the ovens to all parts of the plant.
(2) Wagon-tipping machine for weighing and discharging the coke from the trucks, bringing it from the retort houses. This plant handles 560 tons an hour. There are about 65 miles of railway track in constant use.
(3) Grading and screening plant where the large coke is separated and the small coke is graded into the standard sizes. This can deal with 200 tons an hour.
(4) Ship-loading machine for loading the large coke into ships for export overseas, at the rate of 215 tons an hour.
(5) Rail-loading machine for filling the railway trucks with the large coke intended for home markets, at the rate of 130 tons an hour.
(6) Storage bunkers for storing the clean graded coke. The total storage capacity is nearly 3000 tons.

The whole plant covers a considerable area of ground. Some idea of its size can be gathered from the fact that 2¾ miles of belting are used for conveying the coke and that the belting travels on 10,000 rollers.

Method of Operation.

All coke from the retort houses and coke ovens—except that sent straight to the storage ground—is dealt with by the grading and screening plant before it is dispatched by ship, barge, rail, or road. In all stages of treatment, the coke from the ovens must be kept quite separate from that coming from the retort houses. When the retort house coke is being dealt with, the oven coke is carried direct to the storage ground. This plant, which has a maximum capacity of 200 tons an hour, is made up of three sections:

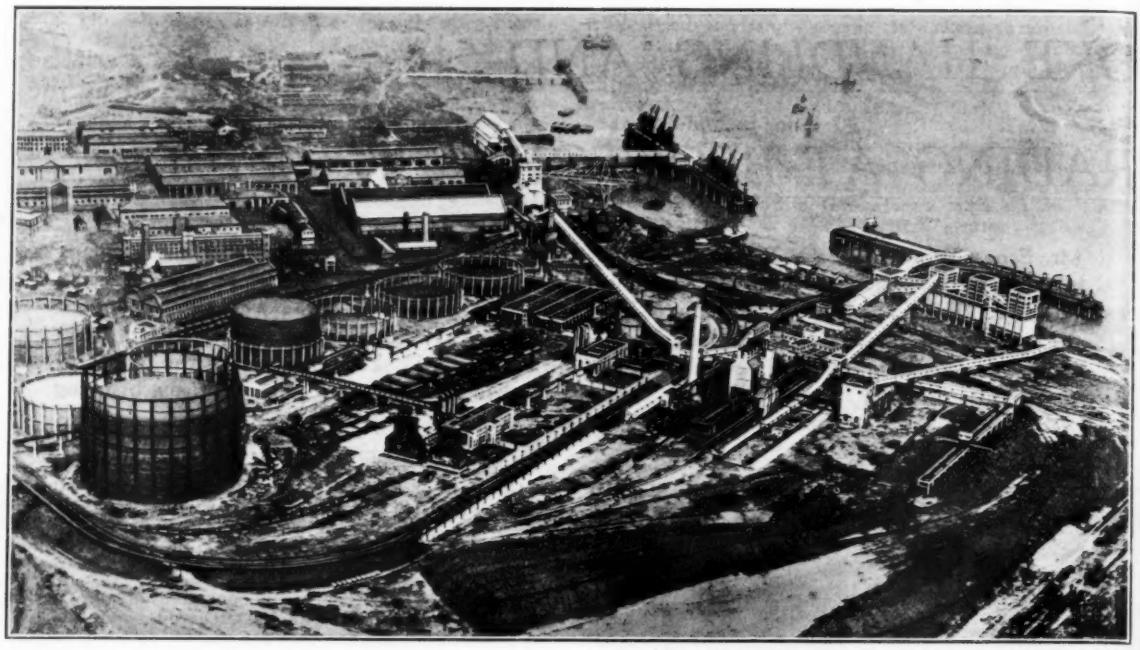
(1) A preliminary scalping machine for removing the small coke from all the large coke leaving the works.
(2) A cutting section for making the small coke.
(3) A screening section for dividing the cut coke into the three sizes, small coke or breeze, nuts, and broken coke.

The extent and lay-out of the retort houses make it necessary to use railway trucks for hauling the gas coke from the houses to the grading plant. As the coke is required, trains of ten to twelve wagons are loaded and brought up by locomotives. The approximate amount of retort house coke handled each year is 630,000 tons. There are about 65 miles of railway track in constant use at the works and, with a plant of such size and output, it is no small job to see that the wagons are brought up, loaded, made into trains and sent off without any delay or interference with the many other duties of the station. Wagon tipplers are installed in a suitable position to handle the trucks of coke as they come from the retort houses. Each tipping cradle is large enough to deal with two standard-type railway wagons of six tons capacity each or one standard twenty-ton truck. The tippler plant has a total capacity of 560 tons an hour. The coke is automatically weighed in the trucks and then tipped into a reinforced concrete hopper, from which it is taken to the scalping station on rubber belt conveyors.

Here all coke under 2 in. is removed, and the large coke or "oversize" is sent to the ship-loading machine on the pier. This is designed to load ships at the rate of 215 tons an hour at high or low tide. It has a wide range of movements to suit every type of vessel, and the loading boom can be lowered right into the hold of the ship. This cuts out the risk of breakage which is bound to occur if the coke is dropped from any considerable height.

The scalping station also contains a further screening plant, which is used together with the rail loading machine. This consists of an electric boom conveyor, which can be lowered straight over the railway trucks. In this way the coke can be loaded into the wagons with as little drop as possible. This plant deals with 130 tons of coke an hour.

The small coke is carried to the screening section of the grading plant, where it is accurately divided up into the various sizes and is then taken straight to the storage bunkers. Different compartments are allotted to each particular size of coke. The outlets of the bunkers are arranged so that the coke can be loaded into the railway



[*Photo. by Aerofilms, Ltd., Bush House, London, W.C.2.*

AN AERIAL VIEW OF THE BECKTON WORKS, SHOWING THE COKE-HANDLING PLANT ON THE RIGHT, AND THE COAL-HANDLING PLANT TOWARDS THE CENTRE.

wagons and on to the system of rubber belt conveyors which is used everywhere throughout the works. The grading plant and storage bunkers are combined in one building of reinforced concrete 266 ft. long by 49 ft. wide and 110 ft. high. The total storage capacity is nearly 3000 tons.

The production of the coke ovens is about 900 tons a day. The demand for this varies and is, to a certain extent, seasonable, which makes it necessary to have a system for storing the coke until it is wanted. For this purpose, a storage ground has been planned conveniently near the coke ovens, with plenty of space to allow for any future enlargements.

The coke, as it comes from the coke ovens, is still wet from passing under the quenching tower and is left to dry on the coke wharf for a fixed period. It is then carried on the belt conveyor to a junction house, where it can be distributed either to the grading plant or straight to the storage ground. All coke intended for storage is taken to a travelling distributor which works on an elevated concrete platform. In this way a stock heap of about 30,600 tons can be stacked up.

Reclaiming from Stock.

For reclaiming the coke from this stock heap, a concrete tunnel has been built under the storage ground. Twenty-five outlets, complete with valves, have been made in the tunnel roof. On opening any one of these valves, the coke flows on to a 48 in. belt conveyor, which takes it back to the junction house for grading or shipping, as required. The feeding belt can be regulated to three capacities—namely, 215, 160, or 55 tons an hour. The full flow of 215 tons is used when coke is taken from the storage ground to feed the ship-loading plant. The lower rate of 160 tons an hour is for the normal supply to the screening and grading plant, while the lowest speed is only needed when boosting the supply from the coke wharf to give the full flow to the shipping plant.

This coke undergoes the same treatment as the retort house coke. The large coke is loaded into ships or railway trucks and the small coke is cut and separated into the standard grades for storage in the different bunkers.

The whole plant has been planned with an eye to future extensions. Later on it is proposed to build another ship-loading machine on the inside berth of the pier, to double the capacity of the storage bunkers, and to put in a system of conveyors for carrying the retort house coke from the wagon tipping platform to the storage ground.

Electric power is used for driving the plant. Sixty-two motors between 1 and 75 H.P. work the various belts, screens, cutters, loaders, and other machinery. An elaborate system of electrical inter-locking has been designed to make the plant semi-automatic and to localize the controls. Great care has been taken with the planning of all points where the conveyors join. This is to reduce any breakage of the coke and cut down the cost of upkeep. All shoots and feed points have been lined with either cast-iron or basalt tiles to protect the coke from abrasion and to prevent stoppage of the plant for renewals.

The huge daily production at the Beckton Works makes it absolutely necessary to use the very latest methods of coke-handling, and this giant plant has been installed to keep pace with modern developments and meet the requirements of present-day markets.

COKE FOR CENTRAL HEATING.

The importance of coke for central heating is stressed in the brochure already referred to, wherein it is stated that recent and far-reaching improvements in the methods of applying coke to central heating have made it the most economical and a most efficient smokeless fuel for this purpose.

In the last few years there has been a great improvement in the ways of centrally heating large or small buildings. The Gas Light and Coke Company have been among the first to respond to the call for better and more efficient equipment. They have improved the grading, quality, and delivery service of the coke, and have done a lot of research work in the designing of better coke boilers for hot water and central heating. Thermostatic control is among the most important of these improvements.

Larger boilers are used for central heating work and also for giving a supply of hot water, when needed. These can be fitted with a complete system of automatic control, by which the temperature of both the room and the water can be regulated. The boiler can be shut down overnight at a turn of a switch, the dampers being adjusted to keep enough fire to prevent the building cooling down too much. If a great deal of hot water is needed, the central heating is completely shut off until enough hot water has been provided. Smaller coke boilers are also fitted with thermostatic control which prevents overheating and waste of fuel and maintains a constant supply of hot water.

Another form of control involves the regulation of the dampers by a small geared motor, working in conjunction with a thermostat which is controlled by the temperature of the room. This system of room control is of great value in keeping down the fuel consumption and in maintaining a steady warmth in the room itself. It does away with any possibility of stuffiness or overheating, which, in the past, has been the great disadvantage of the ordinary central heating system.

There is an ingenious idea for cutting out the bother of stoking. This is the "Notoil" automatic stoker. It is fitted to the front of a typical central heating boiler and can be left to do all the work. Besides having an automatic feed it is automatically controlled and ash removal is only necessary once a day at the most. The Company have now designed automatic gravity feed boiler installations.

LUNCHEON.

The inspection concluded, a large party sat down to lunch, with Sir DAVID MILNE-WATSON in the chair. On his right hand sat Mr. Ernest Brown, and on his left was Dr. S. J. Peters, M.P. (Parliamentary Secretary to the Minister of Mines). Other guests at the top table included Sir Alfred Faulkner, C.B., C.B.E. (Secretary to the Ministry), the Mayor of East Ham, the Mayor of West Ham, Mr. F. P. Tarratt (President of the Institution of Gas Engineers), Mr. C. Valon Bennett (Vice-President), Prof. W. A. Bone, and representatives of the principal distributors of coke, among whom were Mr. John Charrington, Jun., and Mr. J. R. Hopper.

A SERIES OF INTERESTING CEREMONIES.

The CHAIRMAN said it was with very great pleasure that he welcomed them all there that day on behalf of the Board of Directors of the Gas Light and Coke Company to the opening of their new coke plant. They esteemed it a great honour that the Minister of Mines had found time in his very busy life to come down. They were indeed very much indebted to him for all he had done for the coal industry and the Gas Industry and for the great interest he was taking in their welfare. On the way down in the ships so kindly placed at their disposal by the Port of London Authority they were delighted to see so much activity on the river. ["Hear, hear."] They had heard so much about depression lately that it was indeed a gladdening sight to see so much active shipping in the Port of London, and they hoped that it showed that the difficulties with regard to unemployment were being overcome, and that, as a nation, they were at last experiencing the turn of the tide.

The ceremony that had been performed by the Minister of Mines, continued Sir David, was the last of a series of very interesting ceremonies at Beckton. H.M. the King came down some years ago and opened the coal unloading plant, which, he supposed, was the very largest and most up-to-date coal unloading plant in Europe. Then H.R.H. the Prince of Wales followed last summer by opening the coke oven plant from which the coke came that they had seen that day. Lastly, that day they had performed the ceremony of opening the coke handling and screening plant, which was one of the latest, and probably one of the largest of its kind in the country. Certainly in the South of England it was far and away the largest, and they felt that they had put up a plant which would give them excellent results. Just as with coal so with coke—they could supply it just as it came; it had to be treated and prepared so that it met the absolute requirements of their customers; and that was the great object and aim of the plant that they had seen that day. It would prepare graded coke of a definite size and of a standard and quality which they hoped would meet the various requirements of the various industries which they served. Moreover, he thought this development had come very opportunely, because, as they all knew, there had been a tax put upon oil, and therefore it was of the greatest importance that the solid fuel which was produced by this plant should be of a quality and of a size and of a description and of a grade that suited the requirements of all those who wished to use it for any purpose and to use it in their installations in the most economical way. That was the problem which they had tried to solve and which they thought they had solved. He believed that the coke they were going to produce with this plant would result in little less than a revolution in the coke market in this country, and therefore they felt they were doing their share in producing a good smokeless solid fuel which was indeed needed so badly at this time.

He would like to congratulate the Minister of Mines on the arrangement he had made with regard to hydrogenation. Far be it from him to go into the details of that argument; that he would leave to the Minister to do in his place in the House of Commons when the time came. [Laughter.] But he would like to say that the scheme had been conceived with great skill and he trusted it would be a success as far as home-produced motor spirits were concerned.

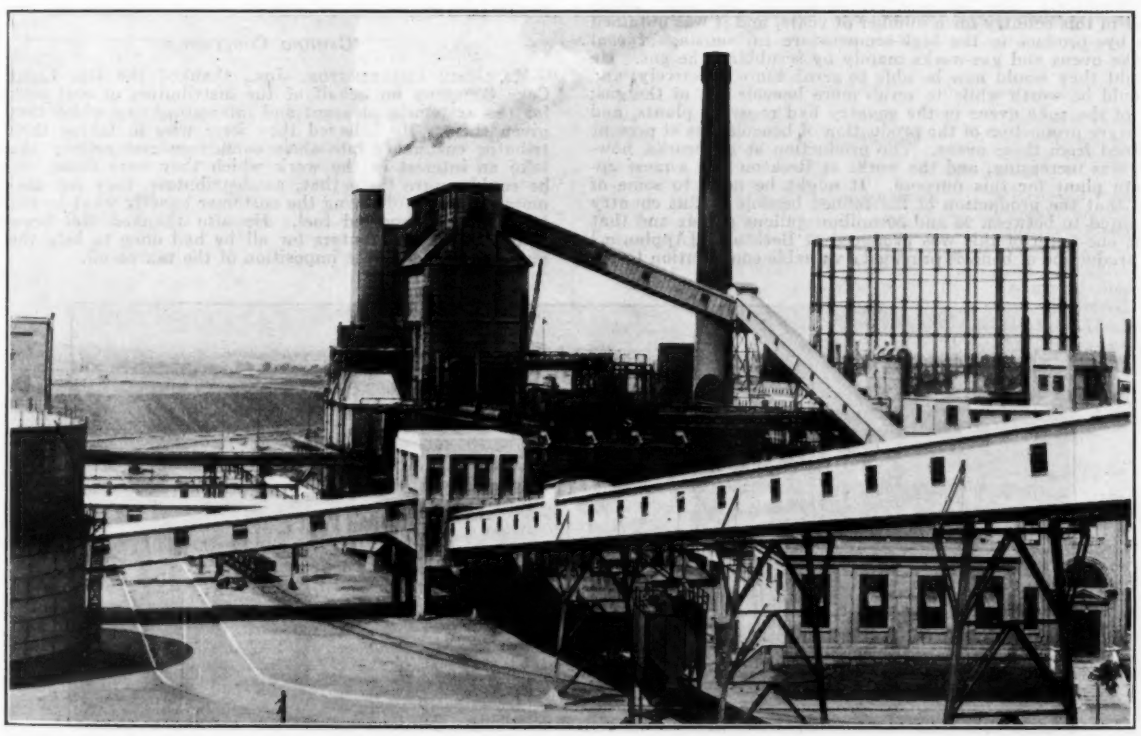
In conclusion, the Chairman asked Mr. Brown's acceptance of a hand-wrought silver cigarette box with a heavily chiselled border, as a memento of his visit to the works, and to mark the great step forward in transporting coke mechanically. The box bore the following inscription:

> I was wrought for Ernest Brown, Esq., M.C., M.P., Secretary for Mines, by command of the Gas Light and Coke Company on the occasion of the opening of the new coke grading and handling plant at Beckton in the Year of Our Lord 1933.

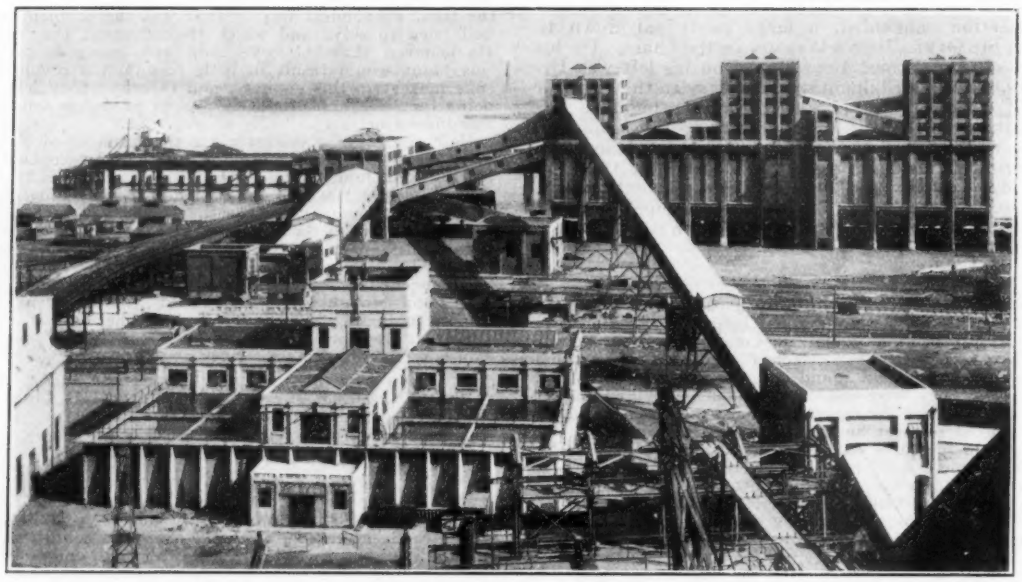
MR. THERM.

Mr. ERNEST BROWN, returning thanks for the presentation, said it had been not only a duty but a great delight to him to go to Beckton that day, and if anyone could not make such a duty a delight, then he must be a very dull and cynical or pessimistic person. Really they were gathered here with Mr. Therm and had some right to be here because, although they might not know it, he was one of Mr. Therm's godfathers. [Laughter.] He happened to be one of five Commoners who sat with five Peers under the Chairmanship of a noble Lord to decide whether Mr. Therm should live or not, and they decided that he should, and to-day nobody was more delighted than he to see the great success he had been.

Of course, it was a great pleasure for any Minister of Mines to have anything to do with the Gas Industry. It must be so because, after all, in these days they made the Minister of Mines a national coal merchant. There were also a number of his fellow coal merchants there, and they were all concerned with the Gas Industry because it was their best customer. Eighteen million tons was no small figure out of the total market of 209 million tons of coal that they had last year, and they were there that day seeing a works which carbonized between 3 million and 4 million tons a year, so that they had to recognize what an important customer the Gas Industry was. It emphasized that Mr. Therm was very much alive; but he had not yet grown a beard and was not even thinking of it. What they had seen there that day made them realize how important it was to take advantage of every technical discovery that could be applied to coal, because coal was not just black rock; it was energy with limitless forms, literally limitless. In this matter, of course, they had to grapple with the engineer and the chemist. It was a good thing to have coal merchants and coal



PART OF THE COKE-HANDLING PLANT IN THE FOREGROUND, WITH THE COKE OVENS IN THE CENTRE OF THE PICTURE.



VIEW OF THE COKE-GRADING PLANT LOOKING TOWARDS THE RIVER.

factors there that day because it was their problem to back up the engineer and the chemist. The latter gave them productive capacity, and it was their job to try to convert that productive capacity into terms of sales.

Home-Produced Motor Spirit.

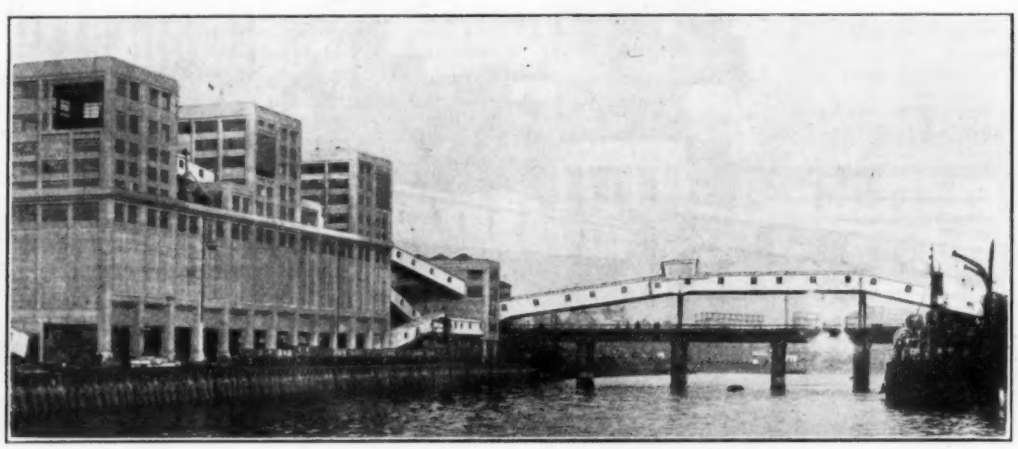
It was a serious task which they as a Government had set their minds upon, as those present had doubtless gathered, and that was to do all they could to encourage the use not merely of coal but of its derivatives. That was really a basic national problem, for what was at the root of their great national welfare was not coal but what could be made from coal.

The Chairman had hinted that he (Mr. Brown) should explain what the Government was going to do in regard to the home production of petrol. The Government had decided to give effect to a proposal which they had reason to believe would ensure rapid advance in the manufacture of home-produced motor spirit from coal. The proposal would take the form of a guaranteed preference [as already outlined in the "JOURNAL"] in respect of light hydrocarbon oils as defined in the Finance Act, 1928, manufactured in this country from indigenous coal, shale, or peat, or from products derived from those substances. Nobody was barred. It meant that Sir David need not be worried about benzole; benzole was in all right. [Applause and laughter.] The manufacture of benzole had been established in this country for a number of years, and it was obtained as a bye-product in the high-temperature carbonizing of coal at coke ovens and gas-works mainly by scrubbing the gas. He thought they would now be able to scrub more effectively, and it would be worth while to scrub more benzole out of the gas; 97% of the coke ovens in the country had recovery plants, and the larger proportion of the production of benzole was at present obtained from these ovens. The production at gas-works, however, was increasing, and the works at Beckton had a most up-to-date plant for this purpose. It might be news to some of them that the production of the refined benzole in this country amounted to between 26 and 30 million gallons a year and that about one-tenth of this was produced at Beckton. [Applause.] The production of benzole provided a valuable contribution to the requirements of this country for motor spirit, and it was hoped that with the guaranteed preference for a period of years for motor spirit produced in this country from coal, which the Prime Minister announced in the House of Commons, there would be an even greater production of benzole in the years to come.

"Now, I must say a word about this great Company," said Mr. Brown, "and it is a great Company. ['Hear, hear.'] It is an old Company, but is none the worse for that. It is 120 years old, but I never deal in age or youth. The thing I think that statesmen and heads of large businesses should be concerned with is not any question of age or youth, but the ability to keep up to date, to learn, and to be able to meet the requirements of the public. I hope the Company will always be as wisely directed as it has been and with such foresight and understanding which in the past has maintained such good relations with its workers. ['Hear, hear.'] I hope that our successors 120 years hence may be able to look back and say, 'If they were alive to-day we could show them something.' The Company has served London without a break during that period, and it now uses three million tons of coal every year. I hope that the merchants and factors and everybody concerned with the Industry will do all in their power to get it into the heads of the British public that it is a national duty—and ought to be a national delight—to use coal and coke and gas, and all the products of our communal wealth. I wish the Company well."

Gaining Confidence.

Mr. JOHN CHARRINGTON, Jnr., thanked the Gas Light and Coke Company on behalf of the distributors of coal and coke for the extremely pleasant and interesting day which they had given them. He believed they were wise in taking their distributor customers into their confidence and getting them to take an interest in the work which they were doing, because he could assure them that, as distributors, they felt the need more and more of giving the customer exactly what he required to keep out imported fuel. He also thanked Mr. Brown on behalf of the distributors for all he had done to help the coal and coke trade by the imposition of the tax on oil.



FROM WORKS TO SHIP, SHOWING THE RIVER SIDE OF THE COKE-GRADING PLANT.

1933 INSTITUTION : EXAMINATIONS :

List of Successful Candidates in the Examinations in Gas Engineering and Gas Supply of the Institution of Gas Engineers

The undermentioned Candidates were successful in the 1933 Examinations in Gas Engineering and Gas Supply of The Institution of Gas Engineers, held under the Education Regulations of The Institution of Gas Engineers, as approved by the Government Education Departments of Great Britain and Ireland, and the City and Guilds of London Institute.

The Results do not include Candidates (*a*) who withdrew before the Examination, or (*b*) who, having Second Class Certificates, re-sat and failed to secure First Class Certificates, or (*c*) whose Examination has not been completed.

J. R. W. ALEXANDER,
Secretary.

28, Grosvenor Gardens,
London, S.W. 1.
26th July, 1933.

Comparative Statistical Schedule of 1932 *and* 1933 *Examination Results.*

Examinations.	1932.					1933.				
	First Class.		Second Class.	Failed.	Total Sat.	First Class.		Second Class.	Failed.	Total Sat.
	Distinction.	—				Distinction	—			
External—										
Diploma in Engineering	1	3	5	2	11	..	3	10	3	16
H.G. Engineering	1	4	12	9	26	..	5	11	4	20
O.G. Engineering	..	5	14	12	31	..	3	11	17	31
O.G. Engineering (single subject)	..	1	..	..	1	..	..	..	..	*Nil*
Diploma in Engineering (Supply)	..	..	..	..	*Nil*	..	..	1	..	1
Diploma in Supply	..	1	1	..	2	..	..	..	1	1
H.G. Supply	..	2	5	1	8	..	4	3	1	8
O.G. Supply	..	3	6	4	13	..	8	8	2	18
O.G. Supply (single subject)	..	..	2	..	2	..	3	4	..	7
Internal—										
H.G. Engineering	2	25	30	20	77	..	15	21	24	60
O.G. Engineering	2	17	36	15	70	1	15	23	21	60
O.G. Engineering (single subject)	..	3	4	..	7	..	3	3	..	6
H.G. Supply	2	19	20	6	47	1	12	22	7	42
O.G. Supply	6	41	47	15	109	9	35	44	16	104
O.G. Supply (single subject)	3	12	5	1	21	4	23	11	..	38
Total	17	136	187	85	425	15	129	172	96	412

EXTERNAL CANDIDATES (70).

Diploma in Gas Engineering (Manufacture) (13).

Class.	Name.	Town.	Subject of Thesis.
First	Harris, A. W. J.	London	"Considerations Affecting the 'Economical' Production of Smokeless Fuel in Continuous Vertical Retorts."
,,	Hawes, F. O.	,,	"Some Work on the By-Product Ammonia Problem."
,,	Mead, K. C.	,,	"The Loss of Gas from Horizontal Retorts."
Second	Brown, J. J.	Liverpool	"The Preparation of Domestic Fuel by High Temperature Carbonization."
,,	Brown, J. M.	,,	"The Determination of the Gasmaking Value of Gas Oil."
,,	Brush, A. S.	Carlisle	"A Study of Refractory Materials with Reference to the Institution Specification."
,,	Elliott, A. W.	Elland	"The Use of a Bell Type Retort House Governor for Foul Main Pressure Regulation."
,,	Leather, A. J.	Blackburn	"The Recovery of Benzole in Combination with Naphthalene Removal from a 425 B.Th.U. Gas."
Second	Lowe, F.	Ramsgate	"Carbonization in Intermittent Vertical Chambers."
,,	Pinder, A. H.	Birmingham	"A Review of Power with Special Reference to Small and Medium Size Undertakings."
,,	Risby, H. J.	London	"Some Aspects on the Heating of Horizontal Retort Settings."
,,	Snowdon, K.	Musselburgh	"The Problem of Fuel Consumption on Vertical Retorts in a Small Works."
,,	Tiddy, K. E.	Haverfordwest	"Some Notes on the Firing of Lancashire Boilers on Gas Works."

Higher Grade Certificate in Gas Engineering (16).

Class.	Name.	Town.
First	Bentley, S. C.	Leicester
,,	Dennis, E. S.	Colchester
,,	Sansom, F. W.	Exeter
,,	Wainwright, A. V.	Shrewsbury
,,	Wright, H. I.	Luton
Second	Butt, F. A.	Paignton
,,	Charuley, F. S.	Liverpool
,,	Hulse, G.	Cleethorpes
,,	James, C.	Salford
,,	Jolly, F. H.	Preston
,,	Mason, R.	Kendal
,,	Siddons, V. J. J.	Barnsley
,,	Speers, J. A.	Morecambe
,,	Warrilow, J. S.	Stoke-on-Trent
,,	Wilkinson, T. B.	Stroud
,,	Wimhurst, J. C.	Newcastle, Staffs.

Ordinary Grade Certificate in Gas Engineering (14).

Class.	Name.	Town.
First	Brake, N. T.	Southampton
,,	Clarke, D. A.	,,
,,	Cole, H. A.	Yeovil
Second	Bennett, S. F.	Leicester
,,	Benstead, T. W.	Maldon
,,	Bentley, C.	Bexhill
,,	Charles, E. F.	Leamington Spa
,,	Heath, C. W.	Longton
,,	Jones, C. B.	Cowes, I.O.W.
,,	Pedler, T. W.	Exeter
,,	Richardson, J.	Sheffield
,,	Riches, N. F.	Ramsgate
,,	Rishwo-th, J. H. F.	Wellington, New Zealand
,,	Sanderson, E. J.	Southend-on-Sea

Diploma in Gas Engineering (Supply) (1).

Class.	Name.	Town.	Subject of Thesis.
Second.	Atkin, F. L.	Birmingham	"The Design of Town Gas Fired Furnaces for Temperatures of 600°–1200° C."

Higher Grade Certificate in Gas Supply (7).

Class.	Name.	Town.
First	Bedingfield, N.	Birmingham
,,	Brockbank, S.	Bridgnorth
,,	England, A.	Blackpool
,,	Smith, W. P.	Bolton
Second	Charnley, F. S.	Liverpool
,,	Goodwill, J. L.	York
,,	Partington, H.	Bolton

Ordinary Grade Certificate in Gas Supply (16).

Class.	Name.	Town.
First	Corrin, C. R.	Onchan, Isle of Man
,,	Eccleshare, K. G.	Derby
,,	Fairbank, W.	Morecambe
,,	Fillery, E. J.	Newark
,,	Garside, R. B.	Morecambe
,,	Halliwell, F. B.	Rotherham
,,	Nichols, F. W.	Plymouth
,,	Patching, H. J.	Deal
Second	Buley, A. E.	Brixham
,,	Dawson, P. R.	Kendal
,,	Gunning, H A. J.	Bristol
,,	Lord, J. F.	Darlington
,,	Morton, N.	Brightlingsea
,,	Pilgrim, E. S. T.	Bristol
,,	Rishworth, J. H. F.	Wellington, New Zealand
,,	Turner, G.	Liverpool

Ordinary Grade (Single Subject) Examination in Gas Supply to qualify to sit for the Diploma Examination in Gas Engineering (Manufacture) (3).

Class.	Name.	Town.
First	Bentley, S. C.	Leicester
,,	Canning, T. H.	Thorpe Bay
,,	Pollicott, F. S.	Derby

INTERNAL CANDIDATES (228).

Higher Grade Certificate in Gas Engineering (36).

Class.	Name.	Centre.
First	Bedingfield, N.	Birmingham
,,	Blenkiron, A.	Bradford
,,	Claydon, J. A.	Birmingham
,,	Gilden, G.	Manchester
,,	Gould, A. K.	Bradford
,,	Haffner, A. E.	Regent Street Polytechnic
,,	Hawkings, B. G. H. J.	Plymouth
,,	Moys, H.	Regent Street Polytechnic
,,	Nachman, I. D.	,, ,,
,,	North, A. V.	Birmingham
,,	Shackleton, H.	Burnley
,,	Tracey, J.	Glasgow
,,	Wearne, E.	Newcastle-upon-Tyne
,,	Wilson, I. M.	Regent Street Polytechnic
,,	Woodhead, C. A.	Liverpool
Second	Allin, N. C. W.	Birmingham
,,	Bath, D. J.	Regent Street Polytechnic
,,	Corder, A. St. D.	Birmingham
,,	Cranmer, A. G.	,,
,,	Cureton, R. S.	Manchester
,,	Hateley, R. N.	Birmingham
,,	Hemingway, C. W.	Leeds
,,	Hinchcliffe, J.	Huddersfield
,,	Lambie, D.	Glasgow
,,	Matthew, J. R.	Newcastle-upon-Tyne
,,	Mawson, A.	Leeds
,,	Mitchell, F. R.	Dundee
,,	Pearce, K. L.	Birmingham
,,	Perkin, A	Manchester
,,	Rhodes, W.	Bradford
,,	Robson, G. W.	Newcastle-upon-Tyne
,,	Royall, E. C.	Birmingham
,,	Sawers, T. R.	Glasgow
,,	Stokes, S. H.	Huddersfield
,,	Ward, H. A.	Birmingham
,,	Wilkinson, C.	Burnley

Ordinary Grade Certificate in Gas Engineering (39).

Class.	Name.	Centre.
First	Bairstowe, R.	Wrexham
,,	Balsom, E.	,,
,,	Blakeley. W. F.	Leeds
,,	Brown, H.	Edinburgh
,,	Freshney, C. E. N.	Glasgow
,,	Fulton, J. H.	,,
,,	Hastie, D.	Edinburgh
,,	Locke, L. H. W.	Dundee
,,	Mitchell, A.	,,
,,	Nielson, W. A.	,,
,,	Ogden, E.	Manchester
,,	Pickard, A.	Leeds
,,	Roberts, T. W.	Birmingham
,,	Shilson, A. C.	Westminster
,,	Tomes, J. A.*	Birmingham
,,	Webber, J. M.	Regent Street Polytechnic
Second	Boothman, F.	Burnley
,,	Cashmore, G. E.	Birmingham
,,	Dukes, J. A.	Regent Street Polytechnic
,,	Fraser-Black, M.	,, ,,
,,	Gibbins, E. A.	Leicester
,,	Hide, L. W. H.	Westminster
,,	Higgs, W. C.	,,
,,	Hoskin, R. E. P.	Cardiff
,,	Kinsey, R.	Newcastle-upon-Tyne
,,	Law, R. K.	Manchester
,,	Marriage, B.	Regent Street Polytechnic
,,	McDonald, J. D.	Edinburgh
,,	Metcalfe, J. S.	Bradford
,,	Mitchell, J.	Wrexham
,,	Mitchell, W. P.	Glasgow
,,	Mulholland, J.	,,
,,	Phillips, G. T.	Birmingham
,,	Taylor, H. E.	Cardiff
,,	Thomas, G. E.	,,
,,	Tidball, F. N.	Birmingham
,,	Underwood, C. H.	,,
,,	White, D. M. W.	,,
,,	Wilkinson, R.	Manchester

*With Distinction.

Ordinary Grade (Single Subject) Examination in Gas Engineering to qualify to sit for the Diploma Examination in Gas Engineering (Supply) (3).

Class.	Name	Centre.
First	Gardner, D.	Edinburgh
,,	Hall, J. S.	Westminster
,,	King, S. A.	,,

Higher Grade Certificate in Gas Supply (35).

Class.	Name.	Centre.
First	Chubb, H. J.	Westminster
,,	Driver, A. G.	,,
,,	Hedges, A. F.	,,
,,	Hepworth, J.	Huddersfield
,,	Huffer, W. E.	Westminster
,,	Junkison, N. R.*	,,
,,	Keir, D. I.	Birmingham
,,	Kennedy-Wilson, E. L.	Westminster
,,	Kimble, R.	Birmingham
,,	Parsons, W. J.	,,
,,	Ramsden, H.	Huddersfield
,,	Smart, L. J.	Westminster
,,	Tipton, A. H.	Birmingham
Second	Baker, F. E. W.	East Ham
,,	Beech, W. W.	Birmingham
,,	Blackwell, G. A.	,,
,,	Boothroyd, R.	Huddersfield
,,	Brown, R. R.	Cardiff
,,	Campbell, W.	Newcastle-upon-Tyne
,,	Conner, G. W.	East Ham
,,	Crump, R. R.	Birmingham
,,	Deans, T. G.	Newcastle-upon-Tyne
,,	Dolton, C. D.	Westminster
,,	Gallington, S.	East Ham
,,	Gibbons, J. H.	Westminster
,,	Hayes, S. W.	,,
,,	Kibble, W. J.	,,
,,	Raworth, C. W.	,,
,,	Shapland, W.	East Ham
,,	Sullivan, A.	,,
,,	Tully, H. A.	Westminster
,,	Walter, F. J.	,,
,,	White, M. J.	,,
,,	Williams, A. S.	,,
,,	Willmott, A. G.	,,

* With Distinction.

Ordinary Grade Certificate in Gas Supply (88).

Class.	Name.	Centre.
First	Atlee, C. H.	Westminster
,,	Beavis, D.	Glasgow
,,	Bedford, G F.	Westminster
,,	Birch, A. R.	,,
,,	Brown, H.*	Edinburgh
,,	Castle, J.	Bradford
,,	Clarke, H. G.*	Westminster
,,	Coltman, R. F.	,,
,,	Cooper, F. G.	,,
,,	Cooper, J. B.	,,
,,	Dibble, A. S.	,,
,,	Earle, F.	,,
,,	Fishlock, C.	,,
,,	Freshney, C. E. N.*	Glasgow

Class.	Name.	Centre.
First	Fry, L. G.	Westminster
,,	Fulton, J. H.	Glasgow
,,	Harding, S. C.	Westminster
,,	Hastie, D.*	Edinburgh
,,	Henderson, D. C.	Dundee
,,	Hentschel, H. M.	Westminster
,,	Holman, H. J.	,,
,,	Holwell, C. C.	,,
,,	Hopwood, R. W.	,,
,,	Jackson, G. W.	East Ham
,,	Jefferies, F. H.	,,
,,	Kohlbeck, W. H.	Westminster
,,	Lloyd, W. H.*	,,
,,	Locke, L. H. W.	Dundee
,,	McDonald, J. D.	Edinburgh
,,	Mitchell, A.	Dundee
,,	Muggleton, H. H.*	Westminster
,,	Palmer, R. G.*	East Ham
,,	Parker, G. W. A.	Westminster
,,	Pickering, E. W.	Leicester
,,	Priday, C. O. M.*	Westminster
,,	Pyle, J. N.	,,
,,	Smith, J. R.	Huddersfield
,,	Stedman, B. M.	East Ham
,,	Tillman, F. H.	Westminster
,,	Tucker, W. A.	,,
,,	Turner, E. A.	,,
,,	Vinten, J. C.	,,
,,	Williams, H. V.	Cardiff
,,	Woolidge, R. A.*	Westminster
Second	Adnams, H. J.	,,
,,	Alexander, A. E.	Newcastle-upon-Tyne
,,	Bayly, G. A.	Westminster
,,	Berry, M. A.	Huddersfield
,,	Borboen, G. H. D	Westminster
,,	Brooks, W.	Newcastle-upon-Tyne
,,	Bugden, H. W	East Ham
,,	Cassell, E.	Westminster
,,	Chapman, W. E. R	,,
,,	Coulden, G. H. R.	,,
,,	Cusins, R. S.	,,
,,	Davis, O. B.	,,
,,	Dougan, R. M.	,,
,,	Evans, B. J.	Birmingham
,,	Galwey, J. R.	Westminster
,,	Gentleman, M.	,,
,,	Gibbons, S. J.	,,
,,	Harrison, W. A	,,
,,	Henson, N. L.	,,
,,	Howe, J. L.	,,
,,	Hulbert, J. W.	East Ham
,,	Huskisson, J.	Westminster
,,	Jukes, J. E.	Birmingham
,,	Lewis, W. F. W.	Westminster
,,	Little, W. N.	Cardiff
Second	Maddocks, D. N.	Birmingham
,,	Maddocks, F. C.	,,
,,	Malone, S.	Westminster
,,	Mitchell, W. P.	Glasgow
,,	Morse, L. J	Westminster
,,	Mulholland, J.	Glasgow
,,	Noble, W.	Huddersfield
,,	Norton, G.	Newcastle-upon-Tyne
,,	O'Connell, J. F.	Westminster
,,	Pannell, R.	,,
,,	Ricketts, B. J.	Birmingham
,,	Roberts, A. G.	Westminster
,,	Ronca, J. G.	,,
,,	Salmon, J. C.	,,
,,	Shaw, E. D. L.	Leicester
,,	Slater, E.	Huddersfield
,,	Thorne, A. H.	Westminster
,,	Thorp, C. M.	,,
,,	Winter, P. G. R.	,,

* With Distinction.

Ordinary Grade (Single Subject) Examination in Gas Supply to qualify to sit for the Diploma Examination in Gas Engineering (Manufacture) (27).

Class.	Name.	Centre.
First	Anderson, E. C.	Liverpool
,,	Bell, D. S.	Manchester
,,	Cook, G. R. T.	Leeds
,,	Davey, W. A.	Westminster
,,	Denoon, J. R.*	Edinburgh
,,	Dougherty, C. J.	Leeds
,,	Haslam, G.	Manchester
,,	Howell, W. F. S.	,,
,,	Kelley, A. F.*	Newcastle-upon-Tyne
,,	Laundy, E. A.	Westminster
,,	Mawson, A.	Leeds
,,	Moys, H.	Westminster
,,	Nachman, I. D.	,,
,,	Newman, R. J.	,,
,,	Pickard, A.*	Leeds
,,	Reed, C. A. E.	Newcastle-upon-Tyne
,,	Rees, K. C.	Westminster
,,	Tiddy, K. E.	Birmingham
,,	Truslove, C. J. F.	,,
,,	Turner, G. O	Westminster
,,	Wearne, E.*	Newcastle-upon-Tyne
,,	Weatherley, W. E.	,, ,,
,,	Westwood, R. A.	Birmingham
,,	White, W. H.	Westminster
,,	Wilkinson, J.	Leeds
,,	Wilson, I. M.	Westminster
,,	Woodhead, C. A.	Liverpool

* With Distinction.

1933 REPORT OF THE BOARD OF EXAMINERS

The Board of Examiners is pleased to submit to the Gas Education Committee, for presentation to the Council of The Institution of Gas Engineers, its Report on the 1933 Examinations held under the Education Regulations of the Institution, as approved by the Government Education Departments of Great Britain and Ireland and the City and Guilds of London Institute.

During the year 1932-33, the members of the Board of Examiners and the Assessors appointed by the Council were:

Major Courses.

Examiners: J. Stanley Thorman (Southall), Chairman; T. Carmichael, M.I.Mech.E. (Portsmouth), R. Robertson (Bristol), Harold C. Smith, M.Inst.C.E. (London), W. J. Smith, B.Sc. (Bolton), and John Terrace, M.Inst.C.E. (London)—Gas Engineering. S. B. Chandler, A.M.I.Mech.E. (London), J. G. Clark (London), H. R. Hems (Birmingham), E. F. Keable (Gorleston-on-Sea), Stephen Lacey, B.Sc., M.Inst.C.E. (London), and A. B. Roxburgh (Newcastle-upon-Tyne)—Gas Supply.

Assessors: England and Wales: R. Robertson (Bristol)—Gas Engineering; Stephen Lacey, B.Sc., M.Inst.C.E. (London)—Gas Supply. West of Scotland: David Fulton (Helensburgh) and John W. McLusky, M.I.Mech.E. (Glasgow)—Gas Engineering and Gas Supply. East of Scotland: H. H. Gracie (Edinburgh) and J. W. Napier (Alloa)—Gas Engineering and Gas Supply.

Minor Courses and Gas Fitting Courses.

Examiners: R. Robertson (Bristol)—Gas Works Practice; E. F. Keable (Gorleston-on-Sea)—Gas Supply Practice; and W. Dieterichs (London)—Gas Fitting.

J. Stanley Thorman,
Chairman,
Board of Examiners.

J. R. W. Alexander,
Secretary,
The Institution of Gas Engineers.

28, Grosvenor Gardens,
London, S.W. 1.
28th June, 1933.

The 1933 Examinations emphasized the advantage which a sound general education gives to those who desire to specialize in Technical Subjects. Clarity of expression and sketching are two matters which should be given more attention by Candidates. In many cases Candidates did not apply the knowledge gained in the study of Ancillary Subjects when answering Questions in the Main Subjects of Gas Engineering and Gas Supply.

Whilst Candidates generally displayed an improved knowledge of the Engineering side of the Gas Engineering Syllabus, there was a tendency to neglect the Chemical side. In Gas Supply there was evidence from the Answers that a lack of knowledge of Chemistry and Physics limits a Candidate's ability to deal with the modern problems of Gas Distribution and Utilization.

Ordinary Grade Certificate in Gas Engineering.

In the Examination for the Ordinary Grade Certificate in Gas Engineering, the quality of the work done by the Internal Candidates compared favourably with that of previous years. In some cases the Questions were very well answered and the sketches were excellent, but in other instances the answers and sketches were unsatisfactory, sketches sometimes being omitted.

The standard of the work submitted by the External Candidates was very fair, but the sketches continued to be only moderately good. A large proportion of the Candidates appeared to have no knowledge of photometry.

Higher Grade Certificate in Gas Engineering.

In the Examination for the Higher Grade Certificate in Gas Engineering, the work submitted by Internal and External Candidates disclosed a fair knowledge of gas testing, purification, retort house governors, calorimetry, and the manufacture of sulphate of ammonia. It is evident that the question of coals is still receiving insufficient attention, and the methods of testing with which Candidates appeared to be familiar are out-of-date. Most of the Candidates had a good knowledge of routine and process working and testing, but the underlying principles were only very vaguely appreciated.

Diploma in Gas Engineering (Manufacture).

In the Examination for the Diploma in Gas Engineering (Manufacture) the work generally did not reach the

standard required. Benzole extraction appeared to be well understood, and it is obvious that Candidates continue to take a keen interest in the Technical Press.

Arithmetical working was not good, and Answers frequently were not clear.

Ordinary Grade Certificate in Gas Supply.

In the Examination for the Ordinary Grade Certificate in Gas Supply, the work submitted by the Internal Candidates was of a good standard, a particularly satisfactory feature being the quality of the diagrams.

The work of the External Candidates shewed improvement, and the sketching was better than formerly.

Higher Grade Certificate in Gas Supply.

In the Examination for the Higher Grade Certificate in Gas Supply the work submitted shewed that the general standard was lower than last year. Sketches were not of the type that might be expected from Higher Grade Candidates and little use was made of graph paper. Candidates were unable to make full use of their knowledge of Chemistry and Physics in its application to the problems of Gas Supply.

Diploma in Gas Engineering (Supply) and Diploma in Gas Supply.

There was one Candidate for the Diploma in Gas Engineering (Supply) and one Candidate for the Diploma in Gas Supply.

Minor Course Certificates.

The Report of the Examiners of the City and Guilds of London Institute on the Examinations for Minor Course Certificates indicates that in Gas Works Practice the work was still of a low standard and the sketching continued to be poor. Generally the Candidates appeared to lack sound practical experience.

In Gas Supply Practice, the work reached a good standard and the sketching shewed much improvement. The subject of Gas Engines is one which is apparently neglected and greater attention should be given to it. The standard of work in Elementary Science has been maintained.

Gas Fitting Certificates.

The Report of the Examiners in Gas Fitting indicates continued improvement in the standard of work generally and in the Candidate's method of expression in particular. Weakness was shewn in the use of simple calculations, and in the Practical Examinations more accuracy is necessary in working to dimensioned drawings.

THE NEWS—continued.

Town Without Electricity.

Extraordinary Statement at Inquiry.

There is reproduced below the main portion of an abbreviated report appearing in the *Western Mail* of a seven-hour Inquiry held at Tredegar on Wednesday, July 19, into the Tredegar Council's application to borrow £6500 to carry out an Electricity Scheme. The opening statement, if correctly reported, seems to be a strange expression with regard to an Industry which has long served satisfactorily a district relying practically entirely upon the mining industry for its existence.

"This is the only town of its size in Great Britain where there is no electricity supply, and however much the Gas Manager or the Council muzzles electricity the people in general are becoming electrically-minded and they do not want gas for lighting purposes."

These remarks were made by Mr. Henry Nimmo, M.I.E.E., M.I.Mech.E., who conducted the inquiry.

The Tredegar Council was represented by the Clerk (Mr. J. Trevelyan Phillips). Opposition was tendered by Mr. W. R. Dauncey, Tredegar, on behalf of the Tredegar Iron and Coal Company; Tredegar Chamber of Trade and Tredegar Rent and Ratepayers' Association; also by Mr. S. D. Herrington (Messrs. Sydney More & Co.), London, on behalf of the South Wales Electric Power Company.

Major Ivor David, of Cardiff, Consulting Electrical Engineer to the Council, said that in the first year the charge of electricity would be 3·6d. per unit. He was confident the scheme could be run at a profit.

Cross-examined, Major David said a profit was anticipated in the third year and onwards. He had based his estimate on 3750 consumers taking 200 units each.

Gas Manager's View.

Mr. D. W. Davies, the Gas and Water Manager, said there was no general demand for electricity, but there was a definite demand from the business portion of the town for window lighting purposes. They would have it regardless of cost. The Council did not propose to use electricity for street lighting, as they had a very high reputation which they did not want to risk.

Mr. T. Morgan (Chairman of the Committee) said he believed all the people should be given equal facilities to obtain electricity if they wanted it and could pay for it. The reason why the Council went in for the first part only was because of the expense and not because they feared the gas-works would be injured.

The Inspector said he was glad to hear that. Everyone in Tredegar should have electricity, and they should have it quickly. He would report to the Commissioners that the Chairman of the Electricity Committee was prepared to extend electricity to the whole district.

For the opposition Mr. Sam Davies, Chief Accountant of the Tredegar Company, said that about 2000 persons in Tredegar received coal at a cheap rate. The output of the collieries at Tredegar had fallen from 1,025,646 tons in March, 1928, to 673,684 tons in March last, and the number of men employed had fallen from 4199 to 3084 in the same period; the wages fell from £273,930 to £162,718. There was no immediate prospect of more men being employed.

Unfenced Hoist Results in Accident.

The National "Safety-First" Association, of 52, Grosvenor Gardens, S.W. 1, publish monthly an *Industrial Safety Bulletin*, consisting as a rule of eight pages and an inset.

In the issue for June last reference is made to the prosecution of a gas undertaking on two summonses in connection with a hoist accident. The hoist in question went up 70 ft., and had gates on three sides, and at each landing. All the gates were of the collapsible type. Two men went up the hoist with a skip of coke; the cage was stopped at one of the landings and the skip was tipped, and put back into the hoist. There was a misunderstanding between the two men, and the gate was open while the hoist had moved. In consequence, one of the men and the skip fell 30 ft.

The local Council, who were owners of the gas-works, admitted the facts, and pleaded that they had considered every aspect of providing for the safety of their workmen. They admitted a technical offence.

They were ordered to pay £2 2s. costs in each case.

New Petrol from Coal Industry.

I.C.I. Official Announcement.

In connection with the announcement in last week's "Journal" of the Government's decision to give active support, by a guaranteed preference of 4d. a gallon, to the manufacture of petrol from British coal, shale, or peat, the following official statement has been issued by Sir Harry McGowan, K.B.E., Chairman of Imperial Chemical Industries, Ltd.:

For six years, it is stated, Imperial Chemical Industries, Ltd., have conducted research on the hydrogenation of coal, tar, and other materials, and in view of the undertaking given in the House of Commons by the Prime Minister, the Directors have now authorized a scheme for the erection of a large commercial plant, which is to be located at the Company's works at Billingham-on-Tees, Co. Durham, where special facilities are available.

An initial output of 100,000 tons a year of first grade petrol is aimed at by processing 400 tons of coal a day and using altogether about 1000 tons of coal a day. The operation of the plant will give permanent direct employment to 2500 miners and other workers, as well as much indirect employment.

The construction of the plant itself, estimated to take about 1½ years, will call for much activity in the iron and steel and heavy industries. 7000 men will find direct employment during these 1½ years, and it is expected that there will be indirect employment for a further 5000 men.

The necessary new capital of about 2½ millions sterling will be furnished by I.C.I., Ltd., from their own resources, which are ample for this new enterprise and for the general business of the Company.

International Congress on Accounting

In the issue of the "JOURNAL" for July 5 we referred to the paper prepared by Mr. William Cash, F.C.A., for presentation to the Fourth International Congress on Accounting, which was held in London last week (the first Congress took place in St. Louis, U.S.A., in 1904), under the presidency of Lord Plender, G.B.E.

On Wednesday, there was a large attendance of accountants at Grosvenor House, Park Lane, W., to hear Mr. Cash's introductory address, which covered in brief but comprehensive review the salient features of the statutory rights, obligations, and restrictions placed upon public utilities in the country generally and upon gas and water undertakings in particular. Delegates and visitors from nineteen countries attended the Conference, and representatives from Holland and New Zealand, as well as accountants from England and Scotland, joined in the discussion which followed the introduction of the paper, and all paid tribute to the thorough manner in which Mr. Cash had placed at the disposal of the accountancy profession throughout the world a succinct and fascinating record of the public utilities operating in, or controlled from, this country.

Although the author disclaimed the honour, we feel that no happier nor more true compliment could be paid to Mr. Cash than the comment of the Chairman of the session at which the paper was presented when Councillor John M. Biggar, F.L.A.A. (President of the London Association of Certified Accountants, one of the sponsoring bodies of the Congress), remarked that "no one was better qualified to speak on the control by Parliament of public utilities in this country;" and we are sure that the Gas Industry will wish to be associated with this acknowledgment of Mr. Cash's contribution to an appreciation of the control exercised over such undertakings in the interests of consumers and the investing public. The portion of the paper relating to the Gas Industry is reproduced below.

Speaking generally, Mr. Cash pointed out that the statutory control exercised in the case of British Public Utilities is two-fold, in that it relates to both charges and profits, and that while they are often referred to as quasi-monopolies, it must not be overlooked that the exceptional powers conferred by Parliament are accompanied by rigid obligations, both as to what they shall and shall not do. In order to emphasize the magnitude of the subject, he referred to the fact that the capital represented by the undertakings supplying London with water, gas, and electricity and operating the road traffic and river transport (London Passenger Transport Board and the Port of London Authority) totals some £320,000,000; and he pointed out that the main object of Parliamentary control is to avoid "undue preference" being given to any particular consumer, although in the case of the railways some slight relaxation from this condition has been necessitated.

Mr. Arthur Collins, F.S.A.A., who is an authority on municipal finance, was the first speaker in the discussion which followed. He referred to the absence from this country of the suspicion until recently evident in the U.S.A. in regard to the alleged exploitation of the community by public utilities, and contended that, while the duty of the directors and officials was to maintain a fair balance between profits and charges, the definition of what constituted a "reasonable return" on capital was not capable of a standard formula, but must be interpreted by accountants in the light of all the facts. For this reason, he was distinctly in favour of the Private Bill procedure in force in this country, by means of which public utility undertakings were enabled to obtain powers other than those applicable to all such statutory concerns, while at the same time a condition precedent to the approval of such Bills by the House was the giving of full publicity to the proposals contained therein, in order that they might be brought under the scrutiny of the consumers in the area of supply whenever such additional powers were sought. Mr. Collins suggested that it would be an achievement of much value if, as a result of this Congress, some international form of standardized accounts could be adopted which would enable the true cost of the production and distribution of gas, electricity, and other commodities to be ascertained. Another speaker expressed agreement with Mr. Cash's plea for the adoption of standard methods of charge, and referred to the multitude of methods under which water was supplied and charged for prior to the British Water-Works Association's successful attempt to reduce these anomalous bases of charge.

On the question of the advantages to the public, as between company and public ownership, the view was expressed that there was room for a divergence of opinion, except that it appeared eminently desirable that water supply undertakings should be in the hands of local authorities or public boards.

Nothing but good can result from a presentation of the difficulties surrounding the carrying on of public utilities in the able manner in which Mr. Cash presented his subject.

The Control of Charges and Profits of Statutory Gas Undertakings

By WILLIAM CASH, F.C.A., President of the B.C.G.A.

Parliamentary authority for the supply of gas is obtained by Special Act or by a Provisional Order, afterwards confirmed by a Public Act, or by an Order made by the Board of Trade. Parliamentary authority having been obtained, certain consequences follow: The company obtain power to construct their works and, if need be, to take defined land compulsorily but only if authorized by a Special Act; they have certain limits of supply assigned to them; they obtain power to break up the public streets for laying and repairing mains and pipes. They obtain power to charge a certain price and are given summary remedies for recovering that price by cutting off the supply and by warrant of distress, as well as by action in any Court of competent jurisdiction. On the other hand, the company come under many obligations and restrictions. They are restricted to definite lands for the manufacture and storage of gas; they may be compelled by consumers to afford them, under certain conditions, a supply of gas, and such gas must be of the prescribed thermal value, pressure, and purity; they submit to a statutory limit of divisible profits, and, in certain events, to the auction clauses (afterwards referred to) when new capital is authorized to be raised.

A gas company is, therefore, a regulated monopoly in the sense that no other supplier of gas can compete with it, but, of course, under modern practice, the competition of electricity and oil has to be met. There are cases of companies supplying both gas and water, but it is usual in these cases to require the accounts of each undertaking to be kept separately. Under the Gas-Works Clauses Act of 1847, Section 30, the profits to be divided are not to exceed the prescribed rate or, where no rate is prescribed, it is not to exceed 10% unless a larger dividend be at any time necessary to make up the deficiency of any previous dividend which shall have fallen short of the said yearly rate, and there are provisions as to the creation of a reserve fund and a reduction of charge when the said fund is full. Clauses are inserted usually in regard to the raising of new capital. The practice under the Private Acts since 1874 has given additional funds, such as an insurance fund to meet extraordinary claims, a reserve fund to be limited to the purpose of making up dividends, and, where the sliding scale of dividend has been introduced, the companies have been allowed also to form a special purposes fund for renewals, while the old reserve fund can be added to only out of profits authorized for distribution but not divided.

The first gas company formed in London was the "Gas Light and Coke Company," which was incorporated by Royal Charter dated April 30, 1812, on the terms of an

Act of Parliament passed three years previously, for the purpose of lighting the Cities of London and Westminster and the Borough of Southwark. This was followed by the establishment of five other companies—the City of London Gas Light and Coke Company, the Imperial Gas Light and Coke Company, the Ratcliff Gas Light and Coke Company, the Phœnix Gas Light and Coke Company, and the Independent Gas Light and Coke Company—which were, severally, incorporated by Act of Parliament in the years 1816, 1820, 1823, 1824, and 1829 respectively.

At one time there was competition between the various London companies, of which there were thirteen, but these have been reduced now to four—viz., the Gas Light and Coke Company, the South Metropolitan Gas Company, the Wandsworth Gas Company, and the Commercial Gas Company. The first two companies celebrated their centenaries in 1912 and 1924 respectively, and are undertakings of considerable magnitude. The first named has an issued capital including loan capital and premiums, of £40,000,000, of which £18,911,000 is sliding-scale capital, employs some 17,000 people, and supplies gas over an area which extends from Staines to Southend. It is the largest gas undertaking in the world and its annual sale of gas amounts to 49,000 million c.ft. Of its 1,370,000 consumers, 760,000 are supplied on the penny-in-the-slot principle. There are many gas undertakings in the hands of municipal authorities outside London—*e.g.*, Birmingham, Manchester, &c.—but there are to-day some 430 statutory company undertakings, with a total issued capital, including loan capital, of, approximately £123,000,000.

About 1875 the sliding-scale was introduced on the following basis:

(1) That the initial price and quantity of gas shall be fairly fixed, having regard both to the immediate existing interests of the companies and the consumers and to the prospects of both under the new system.

(2) That the price and dividend shall vary in certain fixed proportions without limit; so that, on the one hand, the price may be raised without limit as the dividend diminishes, and so that the dividend may be increased without limit as the price diminishes.

The effect of this was to bring the company and consumer into partnership. This principle has been extended far beyond London, and has, undoubtedly, had most beneficial results both to the consumers and to the companies, and, coupled with the auction clauses, has resulted in capital being raised on most advantageous terms. The auction clauses in their application required new capital to be issued by auction or tender to the public, so that such new capital was obtained on the most favourable terms, with the result that the charge for remuneration of capital was as low as possible. In more recent years this provision has, in some cases, been relaxed subject to certain control by the Board of Trade or by bringing the price of issue into relation with current market quotations.

The initial or standard price for gas having been fixed, the relation between price and dividend was that, for every reduction in the price of 1d. per 1000 c.ft., the company was authorized to increase the dividend authorized by 5s. (¼%) on the original or sliding-scale capital of 10%; and *vice versa* for every increase in the price of gas the dividend had to be correspondingly reduced, relative proportions being applied to capital bearing a smaller standard rate of dividend. This method was intended to reward the gas companies for good work and economies effected and, at the same time, with this incentive, secure to the consumers a share of any advantages that might accrue to the business. The proportion of the benefit divisible on an approximate basis is five-sixths to the consumers and one-sixth to the company.

The calculation of the dividend, so far as the price of gas is concerned, is determined by the highest price of gas charged to the consumer during the current half-year or year, and this took no account of discounts allowed or lower prices in force to large consumers. This part of the system was hardly fair to the shareholders, and, commencing in 1920, a new method of calculation has been approved by Parliament which compares the actual revenue receipts for gas with what might have been charged at the "basic price" or standard rate, the difference being termed the "consumers' benefit"—that is, the reduction in charge which the consumers have enjoyed already. The companies are then permitted to distribute to their shareholders, by way of additional dividend, a sum of money equal to one-sixth of the consumers' benefit and, at the same time, another equal sum to their employees. This is a statutory right of the workpeople, subject, of course, to there being profits available to provide for both these additional sums.

The basic prices fixed since 1920 for about 20 companies, representing about 50% of the gas sold by companies, have had regard to the conditions then existing, but before this, during the war years, public utility undertakings found themselves in difficulties by reason of the great increase in wages and the high cost of coal and other materials. Unlike an ordinary trader or manufacturer, they were unable to increase the price of their commodities to cover them, or, if they could do so, they were penalized in their dividends for no fault of their own. Accordingly, Parliament intervened and, in the first instance, passed the Statutory Undertakings (Temporary Increase of Charges) Act, 1918, whereby some measure of financial relief was granted. This Act has expired now. This was but poor and inadequate justice, and in 1920 was passed the Gas Regulation Act, 1920, subsequently modified by the Gas Undertakings Act, 1929. Under the 1920 statute the Board of Trade was authorized by Order to revise the provisions as to charges in all Private Acts and so to raise the maximum or standard charge to cover the extra cost over pre-war figures to the extent of the increased costs beyond the control of the company. With this was linked the thermal method of charging for gas and provisions as to revision of prices, penalties, &c. The Act created also a new and simplified procedure for obtaining statutory powers by Special Order granted by the Board of Trade. Some 500 undertakings under these provisions obtained a standard, or maximum, price, when costs were on a high post-war level, and but few of these subsequently had such prices reduced by an Amending Order. Under the 1920 Act certain Amending Orders were made granting undertakers a higher standard price for a temporary period during the coal strike of 1926. This Act contains also provisions for subsequent revision downwards at the instance of the Local Authorities in the event of costs falling, but reserving for the benefit of the undertakers any economies effected by them in the meanwhile. Similar provisions were enacted also for the benefit of the water undertakings in the Water Undertakings (Modification of Charges) Act, 1921, and for tramways under the Tramways (Temporary Increase of Charges) Act, 1920, the administration being respectively in the hands of the Ministry of Health and the Ministry of Transport. So far as gas is concerned, the working of the 1920 Act has been modified slightly and extended by the Gas Undertakings Act, 1929, and, thereunder, reserves and special purposes funds may be enlarged.

By the Gas Regulation Act, 1920, all gas undertakings have to furnish to the Board of Trade an annual account and such statistics and returns as the Board may require. This provision is intended to supersede the provisions of the Gas-Works Clauses Act, 1871, under which a form of statutory accounts was laid down, although the Board of Trade have not, in fact, prescribed any new form. Statistics are in two parts: One relating to the details of the manufacture and the supply of gas, and the other relating to finance and prices. The accounts comprise the following:

(A) Statement as to capital authorized, issued, and to be issued.

(B) " " " Loan Capital " " "

(C) Capital account showing capital expenditure and capital raised, the balance being carried to the balance-sheet.

(D) Revenue account. Expenditure grouped with subsidiary items under:

Expenditure:
(1) Manufacture.
(2) Distribution expenses.
(3) Rates.
(4) Administration.
(5) Sundry itemized expenses such as Law costs.

Receipts:
(1) Sale of gas—showing quantity sold.
(2) Rents of meters, stoves, &c.
(3) Residuals.
(4) Sundries.

The balance is transferred to:

(E) Profit and loss (net revenue) account:

Debit:
Debenture and other interest.
Transfers to reserve.
Interim dividend.

Credit:
Balance from last account.
Balance from revenue account.
Interest.

The balance (profit available) as per balance-sheet.

Balance-sheet.

Debit:
Balance from C and E.
Reserve and other funds.
Interest due or accrued.
Creditors.

Credit:
Balance from C, if overspent.
Investments of funds.
Stocks.
Debtors.
Cash.

(F) is statistical with figures in tons of coal stocks and coal carbonized and gallons of oil used.

(G) is similar with figures relating to residuals – *i.e.*, coke, tar, sulphate of ammonia.

From these accounts costs per 1000 c.ft. or per therm sold are invariably prepared, and the working of the company can be criticized.

Advertising and World Recovery: Home Trade

Sir Francis Goodenough Addresses Advertising and Marketing Convention

Speaking at a Session organized by the Incorporated Sales Managers' Association at the Advertising and Marketing Convention at Olympia on July 19, Sir Francis Goodenough, C.B.E., President of the Association and Chairman of the B.C.G.A., emphasized that to improve our methods of marketing our goods and services is one of the most important problems of these difficult times for British Trade.

The products of our factories and the services which our financial, shipping, broking, and insurance houses have to offer, said Sir Francis, are the best in the world. And so is our capacity to market. The trouble is, not that we cannot market our product as well as anybody in the world, if we will but put our minds and energies to the job. It is only that we have failed, in all too many cases, to realize the vital importance of putting the best of our minds and sufficient of our energies into the job of marketing.

It is that failure—that neglect—that has caused us to fall behind in the race for business; not any inherent capacity. We have devoted ourselves too exclusively to perfecting production—have put our best human material on to the production side—and have neglected to perfect our marketing and to man the commercial side with the best human material money can buy, as our competitors have done.

In no particular, perhaps, do we need more to improve and increase our marketing efforts than in the matter of advertising, which is one of the most powerful weapons of the sales manager; and I am therefore happy, as President of the Sales Managers' Association, to have the honour of presiding over this meeting of the Advertising and Marketing Convention, which is designed to call attention to that need.

The essential fact to be grasped by the student of Modern Commerce is that while the fundamental principles of commerce remain, as all fundamental principles remain, unchanged by changing conditions and circumstances, the conditions and circumstances under and in which British commerce has to be conducted to-day are widely different from those of the nineteenth century or indeed those prevailing up to 1914.

A New Era.

A new era of Modern Industry and Modern Commerce has begun; and it is firstly an era of international industrial and commercial relations, more inter-related and interdependent than ever before, in which Britain no longer dominates the world without serious rival, as she did until the beginning of this century; and it is, secondly and most notably, an era in which mass production—and mass distribution—has begun to play an important part; is certainly destined to play a great and growing and ultimately dominating part; and will, Sir Francis believed, prove a wholly beneficent factor.

He believed, indeed, that through scientific production of what the masses of the peoples throughout the world want, and, still more, what they will readily learn to want if scientific salesmanship be adopted—at prices at which those masses can buy—not only can and will work be found for all employable labour, but poverty can and will be abolished from our civilization, except in so far as it is due to incorrigible vice.

In other words, by scientific methods of manufacture and marketing, the standard of living can and will be raised to a level of comfort and leisure for the masses at present undreamed of by the visionaries and unachievable by any of the methods advocated by even the most practical of them.

We have a long road to travel out of the economic morass in which the world at present is floundering before that goal is reached, but what a prospect of a beneficent national and international service, through practical work in commerce and industry, such a belief holds out to all thoughtful men and women.

Obviously, indeed, there is demanded thoughtfulness of a high order for the achievement of such a high result. Such a policy, and the putting of it into practice, demands the abandonment of many traditional habits and ways of thought, of many traditional methods, and of much traditional policy.

It requires a refusal to rely upon any State-aid as a substitute for, instead of a complement to, individual thought and action, initiative, and courage. It calls for deep and clear thought and strenuous action, both individual and collective; for fearless and thorough examination of the facts and of all the facts, the whole truth and nothing but the truth, regarding present conditions here and throughout the world.

Holding these views, it will be understood how much Sir Francis welcomed the action taken early in the summer of 1932 by the International Chamber of Commerce—as a result of the Washington meeting of the Chamber in 1931, which decided that Distribution was, at this juncture, the most urgent question for study—in establishing an International Committee (since turned into an International Commission) on Distribution, to investigate the problems which, in this era of modern commerce, call insistently for examination and solution; the problems involved in making most readily accessible to and purchasable by the masses of the world's population, the potential output of the world's factories and the fruits of the world's pastures.

At the recent Congress of the International Chamber of Commerce at Vienna, the subject of Distribution received special attention and a resolution was adopted welcoming the formation of the International Distribution Commission and, while recognizing that the magnitude of its task must make its work long and difficult, urged the Commission to prosecute its activities with the utmost energy; and recommended:

(1) That National Co-ordinating Committees should be formed in all countries and when formed should press on with their work as vigorously as possible.
(2) That the interest and support of business should be enlisted by encouraging the exchange of experience and indicating the immediate and practical value of distributive studies.
(3) That international comparability of statistical and other data should be attained wherever possible.
(4) That universities and other educational institutions should take steps to assist in providing the trained and informed personnel on whom scientific methods of distribution and enlarged markets largely depend.

Sir Francis hoped that when shortly an appeal is made to Commerce and Industry in this country to support a British Co-ordinating Committee on Distribution, an adequate response will be quickly forthcoming, because there can be no doubt that great economies can be effected under the heading of Distribution which would put our producers in a much better position for competing in the home market—as well as abroad—and would correspondingly increase the consumer's purchasing power and reduce unemployment.

Just ten weeks ago Sir Francis expressed the opinion that the turn of the tide had come in trade, though no rushing, flooding-in of the waters was yet to be seen or expected. Well, every bit of evidence that has since come to hand has justified that guardedly optimistic view. He believed he was right in saying that a very sure index of trade movements, the Post Office turnover, has shown plus figures under all headings since the beginning of the year; employment statistics point the same way; and from many quarters he heard of a livening-up of trade.

They all welcomed these signs and hailed the lifting of the clouds, however stormy the sky still looked in many directions. Sir Francis, indeed, had strong faith in an early, steady if gradual improvement in the trade situation; but it is, he suggested, not less but more than ever necessary for us to institute or further pursue plans for increased efficiency in production, finance, management, and marketing, rather than slacken our efforts at the first sign of progress; for the battle for commercial supremacy will not lessen in the future but will become more severe as time goes on; and only that nation will achieve its fair share of trade, only that nation will keep in the front rank of progress, that thinks thoroughly, plans with foresight, trains wisely, and works strenuously at marketing as well as making, at salesmanship as well as craftsmanship.

He was confident, said Sir Francis in conclusion, that this nation is becoming increasingly alive to that necessity and will not be found wanting in the long-run. This Conference would help to increase that awareness and to bring them ultimate prosperity.

NATIONAL ASSOCIATION FOR SALESMANSHIP SESSION.

"This great mercatile country cannot afford to have C3 men, nor even B1 men—we must have A1 men in our commercial army," said Sir Francis Goodenough, when presiding over a Session of the Advertising Convention organized by the National Association for Salesmanship, at Olympia on July 20.

Referring to the objects of the National Association for Salesmanship, Sir Francis said that it had been established

to afford opportunities to young men and women engaged in commerce to study salesmanship and sales management and qualify themselves for promotion. One of the most urgent needs of the country to-day was a better trained army, rank, and file and commissioned ranks alike, to conduct the ever intensifying struggle for trade both in the home and the overseas markets.

The National Association for Salesmanship, in close co-operation with the British Association for Commercial Education, had for its primary aim the furtherance of British trade through the increased efficiency of the personnel engaged in its conduct, and he hoped that employers and their sales managers would encourage all their sales assistants and salesmen to join the one, while they themselves became members and supporters of the other.

The young people of this country, said Sir Francis, had the sterling character, the first-class brains, and the keenness and energy necessary to become the best army of A1 salesmen and commercial managers in the world. This great mercantile country could not afford to have C3 men, nor even B1 men—they must have A1 men in their commercial army.

It was up to all employers to see that recruits to that army were carefully and wisely selected after good, sound, general education; were encouraged to continue that education on specialized lines; were given skilled training during employment in the science and art of commerce; and were paid adequately and promoted on their merits as soon as they had earned promotion. They did not deserve to, and indeed in the long run you could not obtain first-class men, any more than they could get first-class goods, at third-class price.

Then they could and would recover much of the world's trade that they had allowed to pass to nations whom they had shown how to manufacture and who in recent years had shown this country how to sell.

TWENTY YEARS AGO

BELLO MILL, LUGAR, JULY 26, 1913.

William Angus (William Baird & Co.), Ladykirk. **Edward Allen, Liverpool.**
Thomas Newbigging, Manchester. **George R. Hislop, Paisley.**

Exactly twenty years ago, on July 26, 1913, the bronze memorial tablet to William Murdoch fixed upon the wall of the house in which he was born was unveiled; and our photograph was taken outside, Bello Mill, Lugar, on that occasion. In the " JOURNAL *" for July 29, 1913, we gave a reproduction of the Panel, the wording on which is: "The Birthplace of William Murdoch, Inventor of Lighting by Gas, 1754-1839. 'That Incomparable Mechanic'—Nasmyth. Erected by the North British Association of Gas Managers, 1913." Mr. J. W. Napier, of Alloa, recently sent to Mr. A. W. Smith, of Birmingham, a beautiful photograph of the Panel, and this has been handed to the Public Libraries Committee of the City of Birmingham, who have passed it to the Boulton and Watt Collection. The Chairman of the Committee has expressed grateful thanks to Mr. Napier.*

One of the Hailwood & Ackroyd's lamps surmounting entrance gate pillar. Height of lamp, 2 ft. 8 in.

MODERN GAS INSTALLATION AT A LEAMINGTON SPA HOTEL

The convenience of making Leamington one's headquarters while visiting the British Industries Fair at Castle Bromwich is so much appreciated by members of the Gas Industry that some account of the recent re-organization of the Manor House Hotel in that town should be of interest, in view of the important part which has been allotted to gas and gas appliances.

The Manor House Hotel was taken over last winter by a new Company, with Leamington business men as Directors, and they have spared no pains in re-organizing the Hotel with a view to enhancing its long-established reputation for all-round comfort and convenience.

Before deciding on the installation to be adopted, the Directors made extensive inquiries from other hotels in the midlands and coastal health resorts, which resulted in conclusive evidence that gas for cooking and the warming of bedrooms was more advantageous than other means.

The orders which they placed with the Leamington Priors Gas Company included the following apparatus:

Cooking Equipment.

For the Kitchen:

A Carron four-oven externally-heated central range complete with bain-marie and hot closet, all surrounded by a John Wright & Co.'s glass canopy to carry off the steam and vapour from cooking.

A John Wright & Co.'s two-compartment "Celt" steamer for fish, vegetables, and puddings.

A Carron griller or salamander.

For the Still-room:

A Jackson still-room set comprising:

300 pints per hour boiler;
6 ,, milk container; and
6 ,, coffee-making machine.

A Carron griller and toaster.

For the Servery:

A Carron combined hot closet and carving table complete with bain-marie meat covers and lifting gear.

These gas appliances have chromium-plated fittings, and it will be seen from the accompanying photographs that they form a model installation.

Bedroom Heating.

Over thirty of the bedrooms have been fitted up with a gas fire supplied through a new type of 30/50 c.ft. per hour Wilson shilling-in-the-slot meter with direct-reading dial and setting-to-zero attachment, contained in a white-enamelled steel cabinet less than 12 in. square by 9 in. back to front. It is the intention to extend this system throughout the hotel. [Reference to these small meters and cabinets was made in Mr. R. N. Le Fevre's paper before the London and Southern District Junior Association, December, 1932 (see "Journal" for Dec. 14, p. 752).]

Most of the gas fires are "Sunbeams," which simulate so well the appearance of a glowing coal fire, a few being of the Radiation upright design, the fireplace surround being built up where necessary with asbestos tiles. Every bedroom has also been fitted with a wash basin with hot and cold softened water and a conveniently illuminated mirror above.

Entrance Gate Lamps.

For lighting the entrance gateways four Hailwood & Ackroyd lettered globe lamps, each with a Sugg's superheated burner with four bijou inverted mantles and Horstmann controller have been installed, while near the entrance gate is a temporary gas flood-lighted notice board on which appears in open Roman capitals:

> This hotel is being fitted with modern appliances combining efficiency, cleanliness, and saving of labour. Gas installation includes kitchen and still-room equipment, also gas fires in all bedrooms.
> Architect.—Arthur Ashton, F.R.I.B.A.
> Contractors.—Leamington Priors Gas Company.

New Piping Required.

In order to supply the installation, a new 4-in. service pipe has been laid with control valve in the Hotel grounds. A 3000-c.ft. Geo. Glover high-capacity meter has been fixed with 4-in. inlet and outlet valves and 3-in. by-pass valve; 3-in. supply main from meter to kitchen departments; 3-in. rising main for gas fires, reducing to 2-in. for top floors; and 1¼-in. supplies from meter to each entrance gateway for the outside lamps.

Messrs. Seymour Sweet & Co., of Birmingham, have installed a "Permutit" water softener to supply softened water to a 1000-gallon storage tank, together with an "Ideal Britannia" boiler for the central heating and an "Ideal" domestic boiler.

The heating is on the low pressure hot water system accelerated by motor driven pump to deal with the various levels throughout the building. The domestic hot water service is on the direct system, an Ideal domestic boiler serving a 300-gallon storage cylinder whence the mains and branches are run to serve the various parts of the building.

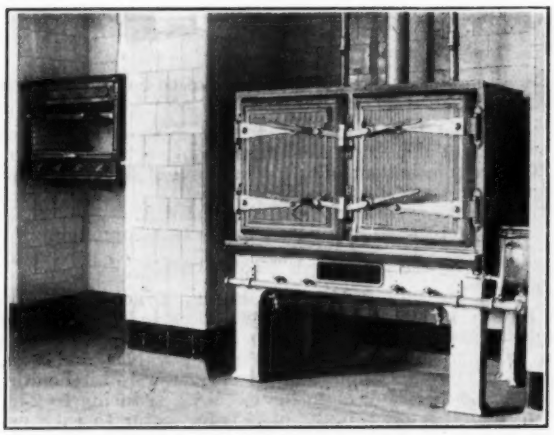
The Leamington Priors Gas Company have secured the

"Sunbeam" gas fire in one of the bedrooms, showing prepayment meter cabinet alongside.

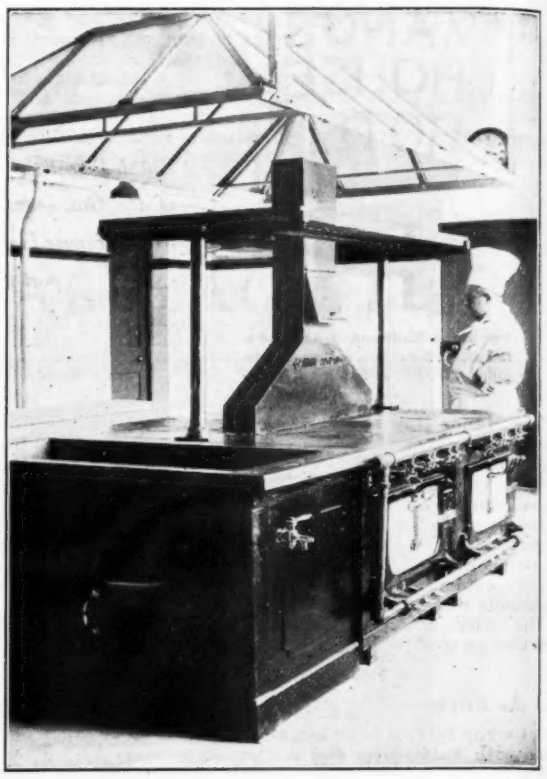
contract for the twelve months' supply of coke for these boilers.

The whole of the work has been carried out under the supervision of Mr. Arthur Ashton, F.R.I.B.A., one of the Directors of Manor House Hotel, Ltd., and the Manager, Mr. Frederic Moore. The Manor House Hotel is within three or four minutes' walk of the G.W. and L.M.S. Railway Stations, Post Office, and Pump Room. It stands well back from the road in extensive private grounds which overlook the Royal Pump Room and Gardens. It can provide for 120 diners and has ample garage accommodation, including 15 lock-ups.

GAS COOKING EQUIPMENT AT THE MANOR HOUSE HOTEL, LEAMINGTON.

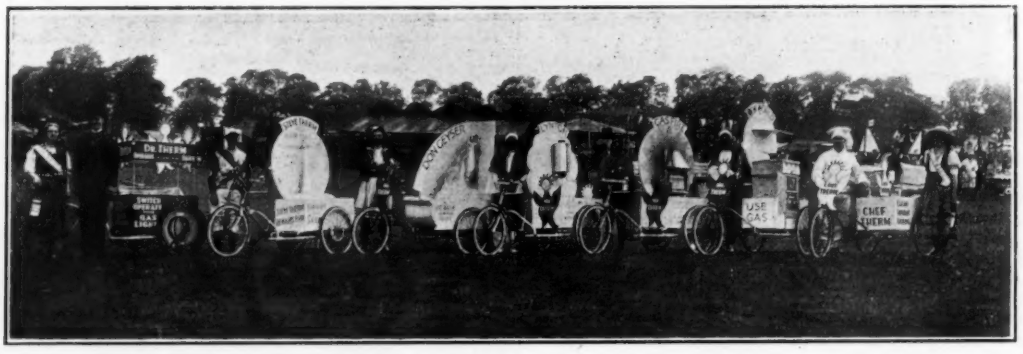


John Wright & Co.'s two-compartment "Celt" steamer and Carron griller at one end of the kitchen.



Carron four-oven central range, complete with bain-marie and hot closet with John Wright & Co.'s glass canopy and asbestos flue piping above.

Gas Carnival Exhibit at Kenilworth



Our photograph shows the City of Coventry Gas Department's exhibit, which secured a first prize in its class, in the recent carnival procession at Kenilworth. The Richmond Gas Stove Company supplied the exhibits, which fix over the boxes of the cycle sidecars, and these depicted in a striking manner the use of gas for all domestic purposes. Members of the Department's maintenance staff represented Dr. Therm and his assistants.

Petrol from Coal

In the course of an address delivered at a luncheon on Monday of this week, Col. W. A. BRISTOW, Chairman of Low-Temperature Carbonisation, Ltd., made the following remarks upon the subject of the production of petrol from coal by hydrogenation and low-temperature carbonization.

The fact that nearly 400,000 miners are out of work, and that the use of coal may continue to decline, is obviously quite sufficient reason for treating the subject of oil from coal as one of paramount importance. National issues are involved of considerable magnitude, and they may even be vital to the existence of the British Empire. In the last few months the subject of the mining industry, oil from coal, smokeless fuel, low-temperature carbonization and hydrogenation have been dealt with in the Press more extensively than any other subject and in the main with an accuracy and degree of enlightenment that is proving of the greatest possible value as an educational force. Public opinion, therefore, was keenly alive to all that might be involved by the new departure in Government policy recently announced by the Prime Minister, and the matter has become one of almost unprecedented interest.

The Prime Minister's Statement.

I propose firstly to explain what this statement by the Prime Minister really means. As you are aware, benzole and petrol have been made from coal for many years past, and both these products have always been exempt from the duty on imported light hydrocarbon oils. At present they enjoy a virtual preference of 8d. per gallon, and this for a long time has been the brightest spot in the coal bye-products business. Naturally the coal, gas and carbonizing industries would have welcomed any proposal to extend the period of this preference beyond the usual year-to-year arrangement between Budgets, but without new legislation this could not be done. Under this new scheme, however, for which we owe a deep debt of gratitude to the Mines Department, we are guaranteed a preference for ten years to come, a most valuable measure of help to existing industries, and one that is essential to the development of any new industry such as that contemplated by the development of the hydrogenation process on a commercial scale. The actual arithmetic of the new proposals is as follows: From now until April 1, 1934, we have the balance of this year's 8d. per gallon. For the period April 1, 1934, to April 1, 1935, we shall also probably continue to enjoy the 8d. per gallon. It is not, however, definitely stated in the announcement made by the Prime Minister, and if possible this ambiguity should be removed. The official announcement reads: "A guaranteed preference at the rate of 4d. per gallon," followed by clauses as to what shall happen after March 31, 1935. I am given to understand however it should be so worded as to allow of the present preference of 8d. being continued to March 31, 1935. After this a further 36 pence/years is provided for—in all, a total of 49·1/3 pence/years from August 1 this year.

These benefits apply to all coal petrol made by any firm and by any process, and equally apply both to the present industry and the hydrogenation industry when it comes into being. It is, I think, important to bear this in mind, as the impression has quite erroneously been created in some quarters that for the first time we are now about to witness the manufacture of petrol from coal as a result of these new proposals.

In the years 1928, 1929, and 1930 my Company erected three plants for the recovery of petrol from coal, the first at Barugh near Barnsley, the second at Askern near Doncaster, and the third at Greenwich for the South Metropolitan Gas Company. These have worked continuously since they were first erected, and up to date one million tons of coal have been carbonized in the low-temperature plants at these places.

Aircraft-Flying on Coal Petrol.

The petrol produced is a unique product, and far superior to petrol produced from petroleum. It has a much higher anti-knock value, and is more volatile. It is a most happy scientific accident that confers a very considerable benefit upon the mining industry. We do not have to apologize for coal petrol; it is easily the best petrol commercially available to-day. It has never been suggested that any petrol that may be made by hydrogenation will be any better.

It is now some three or four years since we gave the first public demonstration of aircraft flying on coal petrol. The quality of the spirit and methods of refining have been steadily improved, and to-day an entire Home Defence Squadron is using coal petrol only. This full-scale test has now been in progress for several months, and the results are so far completely satisfactory. It is the only straight petrol used by the Royal Air Force—that is, petrol unmixed with benzole or chemical salts.

"Carless-Coalene."

In the latter stages of our work we have had the advantage of co-operation with Messrs. Carless, Capel, & Leonard, who have been of great assistance in helping us raise the quality of the refined product to its present very high level; and we have entered into an agreement with that firm, covering all the matters relating to the production, refining, and distribution of coal petrol for a term of years. In addition, we have registered a joint trade mark for the product—namely, "Carless-Coalene," the latter word being the trade mark which we have had for some years for our coal petrol.

A Comparison.

The next question that naturally arises is as to how the processes of low-temperature carbonization and hydrogenation compare as to cost of operation, yield, &c.

According to official statements, the proposed hydrogenation plant will consume about 350,000 tons of coal per year, and will produce 30 million gallons of petrol therefrom. We are also informed that it will cost about 2½ million pounds. I am going to suggest to you that the only real basis for comparison is to see what can be done for equal capital cost—in other words, what is the national gain per unit of new money, in this case 2½ million pounds.

The low temperature process figures work out as follows:

Capital, £2,500,000.

Throughput capacity of works, 2,500 000 tons of coal per annum. (This figure of £1 per ton capital cost has already been achieved.)

	£
Output—	
Smokeless fuel, 1¾ million tons at 30s	2,625,000
Oil, 40 million galls. at 2¼d.	416,666
Petrol, 7 million galls. at 1s. 6d.	525,000
Gas, 75 million therms at 3d.	937 500
Total	£4,504,166
Less subsidy in the form of exemption from duty:	
20 million galls. oil at 1d.*	200,000
7 million galls. petrol at 4d.	
Net	£4,304 166

* Only half the crude oil, after distillation, enjoys the preference of 1d per gallon.

It is obviously proper to deduct from the gross revenue any exemption from excise duties as such moneys are in effect paid by the State, and are a loss to the National Revenue. There are, of course, very good reasons why the products of these new industries should enjoy a measure of support, and I have very strong views on that point. At the same time, however, I think it only fair that the amount of such internal financial support should be deducted from the total of real creative production.

The hydrogenation process figures appear to work out as follows:

Capital, £2,500,000.

Throughput capacity of works (according to Prime Minister's statement), 350,000 tons of coal per year.

Output (again according to the Government statement)—

	£
30 million galls. of petrol at 1s. 6d.	= 2,250,000
Less subsidy—	
30 million galls. at 4d.	500 000
	£1,750,000

The two totals for annual output therefore are £4,304,166 for low-temperature carbonization and £1,750,000 for hydrogenation, a balance in favour of carbonization of just over 2½ millions per annum. As long as the preference on home produced petrol is over 4d., so long will this great difference be still further increased.

The argument is often advanced that so far as the mining industry is concerned, and the relief of unemployment, it is better to make petrol by hydrogenation, as in that process all the coal is converted into something that does

not compete with coal as a fuel. This is perfectly true, and there is a marked difference between the two processes, as by low-temperature carbonization no less than 70% of the product is smokeless fuel, which replaces that amount of raw coal. Let us, however, measure the value of this factor by the same standard of benefit received per unit of new money invested. With 2½ million pounds, low-temperature plants can be built to absorb 2½ million tons of coal per year. Of this no less than 30%. or 750,000 tons, is converted into other products, as against the 350,000 tons per annum absorbed by the hydrogenation process—in other words, twice the benefit to the mining industry and relief of unemployment.

Against this, however, the hydrogenation process produces far more petrol per ton of coal, and, even when measured by the capital cost test, there is produced about 30 million gallons of petrol, as against 7 millions by the low-temperature process. It is possible, by suitable distillation of the low-temperature crude oil, to increase this figure of 7 millions to at least 12 millions; but—and this is of the utmost importance—by the low-temperature process there is obtained for the same capital cost 47 million gallons of oil and petrol, as against the 30 million gallons of petrol obtained by hydrogenation.

In this connection, it must be remembered that there is a movement going on to change over from petrol engines to Diesel, and other types of compression ignition engine, and what is termed the bi-fuel engine, all of which can be supplied with fractions made from crude coal oil. It is also just as important that the Navy should have fuel oil, and I submit therefore that, when considering this subject, we should give full credit to the low-temperature process for the greater amount of liquid products obtained per unit of capital cost. It is often pointed out by the supporters of hydrogenation that their process can be carried on to any extent without the necessity for disposal of any products other than petrol, and this is quite a fair argument. Events in the last few years, however, indicate that the demand for low-temperature smokeless fuel will in all probability run ahead of production for years to come.

Hydrogenation of Coal Oil.

There is one more item of importance to which I wish to refer, and that is the hydrogenation of our present coal oil. As many of you know, low-temperature crude coal oil can be converted into motor spirit by hydrogenation by a one-stage process, and it can be seen in operation daily at the Fuel Research Board Station in Greenwich. Very large quantities of such oil have been so converted in Germany, and the yield by volume is no less than 100%. It is possible, therefore, if hydrogenation is a commercial success, that it may become a most useful ally to our present process, but I do not propose to take any credit for that now. I do submit, however, that in the light of our present knowledge, it would be more than rash to assume that the production of petrol from solid coal by hydrogenation offers any greater attraction than the process which we now work, or that it offers any greater national advantages.

In conclusion, I wish to state that nothing I have said is to be construed as criticism of any particular company or their proposals. That great undertaking, Imperial Chemical Industries, is one of the finest organizations of its kind in the world, and constitutes a most important national asset. I would also like to make it clear that the production of petrol by hydrogenation does not constitute competition to the low-temperature industry. The amount of coal petrol made by each process is only likely to be a relatively small part of the total consumption.

A Householders' Licence to Burn Raw Coal?

We intend to ask the Government to do something to focus public attention in a practical manner upon the disadvantages and appalling waste of burning raw coal for domestic purposes. In the first place, we propose to suggest that every householder wishing to burn raw coal for domestic purposes shall be required to take out an annual licence at the Post Office, and that it shall be an offence to supply coal to any unlicensed person or premises. If we have to pay 7s. 6d. to keep a dog—the friend of man—why not 2s. 6d. or 5s. for the privilege of discharging into the atmosphere soot and smoke—the enemy of man? If the Government feel diffident about taking any further money from the public in the shape of taxation, the sum so raised could be returned to the industry and the Fuel Research Board for purposes of research.

The institution of some such licensing scheme would, I feel sure, do much to educate the public as to the real necessities of the situation. It would give enormous impetus to the smoke abatement movement, and greatly help the carbonization industry as a whole.

LEGAL INTELLIGENCE

"Rayrad" Heating Case

Damages Claimed Against Mr. A. H. Barker

For several days Mr. Justice Horridge and a Special Jury in the King's Bench Division were occupied in hearing an action by Mr. Charles Taylor, of the Basil Hotel, Knightsbridge, London, against Mr. Arthur H. Barker, Consulting Engineer, of Victoria Street, London, in which the plaintiff claimed damages for alleged misrepresentation or for alleged negligence by defendant while engaged as a consulting engineer on his behalf.

It will be recalled that Mr. Barker presented a paper at the recent meeting of the Institution of Gas Engineers on the heating of buildings by gas, in which he referred to the system which was the subject of the present case.

Mr. *Taylor* asserted that Mr. Barker, who also was concerned in the business of the Electro Gas Development Company, Ltd., was consulted by him in April, 1929, as to the best method of heating a private house he had purchased in Pont Street, Mayfair. Mr. Barker advised the use of a "Rayrad" system, stating that it had been installed in public buildings in the City and had been satisfactory, that it was economical, that perfect control could be obtained, that it was a practicable system, and that it would cost about £450. Plaintiff alleged that those representations were inaccurate and that the system cost £700 to install.

Mr. *Barker* denied that he made the representations alleged. He further denied that, if they were made, they were false, or that they were made with the intention of inducing the plaintiff to act upon them. He also denied that he was engaged by plaintiff as his engineer to supervise the installation, or at all, or that he had been guilty of any negligence, or that there was any implied warranty on his part, or that plaintiff had suffered any damage.

Giving evidence, Mr. *Taylor* stated that he had known Mr. Barker for some years. After he bought the house in Pont Street he consulted Mr. Barker about a heating system that would not entail the use of expensive plant and that would be simple to run. Mr. Barker recommended a "Rayrad" system, saying it was perfect in every way, and where it had been installed it had given every satisfaction. Inspecting the house he said it was suitable for that class of heating system, and he mentioned a price of £545. That sum was regarded by him (plaintiff) as too high, so he decided to purchase the plant for £180 and engage a competent fitter to fix the pipes, paying his wages, *plus* 10%, to the firm from whom he came. Later, he was astonished to receive a request from that firm for £400 for wages, &c.

Plaintiff was asked by Mr. Malcolm Hilbery, K.C. (for the defendant), whether he was not aware from the outset that the plant was an experimental one for a private house, and, being pressed, he assented, agreeing that he had written to Messrs. Fenton & Barnes. He also admitted that he hoped to foster the invention, being a new one, but he said he would not have entered into the matter had it not been for a circular and a letter from defendant about the system. The fitter had been engaged from Messrs. Fenton & Barnes, and he wrote to that firm about the big bill for wages that had been presented to him. Plaintiff also admitted that the job was a test one. After consulting another firm he dismantled the system. He did not understand that this system had not been upon the market generally, for defendant told him that the system was complete and had been standardized after being the subject of laboratory experiment. He was very interested in it, but not from a business point of view. He was anxious to help Mr. Barker, who told him that the system would revolutionize the world in heating matters. Although he received a number of circulars, he did not read them very closely and had not noticed that they stated that "particulars, designs, and quotations about the system can be obtained from the Electro Gas Development Company, Ltd.," followed by the name of H. P. Barker. He was not aware that Mr. H. P. Barker was the son of the defendant. He denied that it was suggested to him that he should go and inspect the plant at the Gas Light and Coke Company's premises. He accepted the defendant's assurance that the system was a good one, and declared that Mr. Barker took full responsibility for

the success of the installation of the system, and he thought the labour connected with the installation would be about £120.

Mr. HILBERY said some of the parts were standard and made by the National Radiator Company.

Mr. *Taylor* said he thought defendant would act with regard to the installation as an architect would to a house. His claim for damages included the loss of use of the house as well as the cost of dismantling the system.

THE CASE FOR THE DEFENCE.

Opening the defence, Mr. HILBERY contended that no reliance could be placed on Mr. Taylor's statement that he was induced by Mr. Barker to take up the installation, for plaintiff well knew that this was the first time such an installation had been placed in a private house. Plaintiff, commented Counsel, was fussy and anxious. Mr. Barker had pointed out to him that he could always see the experimental plant at the Gas Light and Coke Company's premises, where it was open for inspection. Mr. Taylor, said Counsel, had made up his mind to have the installation, and the only other matter that concerned him was the cheapest way of getting it installed. It was idle to say that the letter and circulars decided the plaintiff to have the plant, and the circulars certainly, in his (Counsel's) opinion, contained no warranty. Mr. Barker, naturally, was perfectly happy to co-operate with plaintiff in the installation of the plant and to do all he could to make it successful. Mr. Taylor stopped the work himself because he quarrelled with Messrs. Fenton & Barnes, and evidence would be called to show that the system of heating was a safe and practicable one. Mr. Hilbery submitted that on the plaintiff's own evidence no charge of fraud could be sustained against Mr. Barker.

Mr. *Barker*, in evidence, said he held many engineering qualifications, and was the author of "Barker on Heating." He was a heating and ventilation consultant. He had been friendly with Mr. Taylor for some time, and they discussed the heating question in full with regard to plaintiff's house. He informed plaintiff that he looked forward to the time when his son could develop his patent systems of heating. Plaintiff at first suggested electric heating for the house, and when it was pointed out that that might be costly he made a suggestion about the "Rayrad" system. He (defendant) replied that it was not yet on the market, but his son had commercial ability and that the title of the Electro Gas Development Company had been registered. He told plaintiff that the system had not yet been installed in a private house, but only experimentally in the Gas Company's premises and in offices of firms interested in gas. He knew of no reason why the system should not be suitable for a private house, and he thought it was a good one. Later, he visited plaintiff's house in Pont Street and told Mr. Taylor that it seemed suitable for the experiment and an estimate for £450 was obtained.

His LORDSHIP remarked that he could see no evidence of misrepresentation with regard to the figure of £450, and he directed, after Mr. SINGLETON, K.C. (for plaintiff), had concurred, that that part of the case need not further be gone into.

Mr. *Barker*, replying to the Judge, said that Mr. Taylor was definitely informed that this was the first domestic experiment.

His LORDSHIP said he could find no particulars of negligence in the statement of claim against defendant during the progress of the work.

Mr. SINGLETON disagreed, and his LORDSHIP pointed out that the negligence alleged was only during the time defendant was advising the plaintiff before the work commenced.

Mr. *Barker* said he did not consider that he was consulting engineer to the plaintiff, and any statements he made in his letters were absolutely true. The devices he had made for safety had never, to his knowledge, failed. There was an automatic valve at each "Rayrad" which cut off the supply to the main burner if the pilot light went out. The "Rayrads" were designed for use at a moderate or low temperature. He had never seen an outlet cock choked and could see no possibility of unburned gas escaping. If gas were burned in a properly regulated device no soot would be produced, and if the burners were adjusted properly no noise could be detected. If any noise was apparent the apparatus could be enclosed in a noise-proof box. He considered the system was capable of close control.

In cross-examination, defendant said duration tests were now in progress at the South Metropolitan Gas Company's works in Old Kent Road and at some works in Leeds. The whole thing had been handed over to the Electro Gas Development Company, his son being in charge. The only question was how to carry out the details. This year, said Mr. Barker, he had addressed the Institution of Gas Engineers at Liverpool on the system. The details in plaintiff's house were very good, but he could make them better, for improvements were carried out every year.

Mr. Barker stated that he did not go to see plaintiff when the break came because of matters which appeared in the correspondence.

His LORDSHIP pointed out that in a letter Mr. Taylor apparently made allegations against Mr. Barker.

Mr. *Barker* declared that his sole interest was to endeavour to get the system to work satisfactorily when it was completed, and he felt that he had obligations to the plaintiff to see that he had everything of the best.

His LORDSHIP, stating that questions might arise as to the rejection of the plant, commented on the fact that plaintiff waited all the winter before doing much in the matter. He wrote that he was thoroughly disgusted and the question might be whether, if he was going to reject the plant, he should have done so at once. If that were so, and he waited all the winter, then it might appear that his claim for £1000 for loss of use of the house and expenses at the Basil Hotel might disappear.

Mr. SINGLETON said he had that point in mind and would deal with it later.

Mr. *Barker* said that there were about a dozen successful installations of the plant all over the world, but mostly connected with gas concerns, and all of them were experimental, with the exception, possibly, of one in the Argentine and another in Belgium. He could not say if they were working. The South Metropolitan Gas Company paid for their installation when they found it worked satisfactorily. It was a practical plant for warming put in experimentally to ascertain its durability, and he did not think the Gas Company had received any orders for it yet, although that was not because it was not practicable commercially. The Electro Gas Development Company carried out the operations with the South Metropolitan Gas Company. He had not been asked to define his relationship with the plaintiff when the order was given for the system, and, as a consulting engineer, he would have insisted on a contract for carrying out the work and not acted on a time and material basis. All orders would have had to be given by him and payments made only on his certificate with a final payment after a twelve months' run. He never, however, gave Fenton & Barnes' workmen any orders except as instructed by Mr. Taylor.

His LORDSHIP commented that the fitters seemed to be of Mr. Taylor's own choice, and he stopped them working.

Mr. *Barker* emphasized that he did his best to make the system a success, and said he believed it would have been a success if properly worked.

In further re-examination, Mr. *Barker* said when he declined to have an electric system Mr. Taylor asked about the "Rayrad" system, about which "he had read a circular." Witness said he thought it was far enough advanced in experiment to be installed in a private house, and that he would certainly use it in his own home if necessary. That was an honest opinion. It was not true to assert that he told plaintiff that he had received orders for the system for City offices, but it was true that he considered it to be less costly to install and run than other systems.

His LORDSHIP remarked that before the jury could hold that plaintiff should have a verdict they must find that the statements alleged against defendant were made by him, that they were made falsely and were untrue.

Mr. *Barker* added that there was no risk of accident, apart from reckless mismanagement, in the system, and the pilot control was perfectly competent, and the light was so small that no explosion could occur.

After Mr. Barker had given evidence for ten hours,

Counsel called as a witness Mr. *J. Rogers Preston*, Consulting Engineer, of Talbot Mansions, Museum Street, W.C., who said that he had inspected the system at the Gas Company's works, and his impression was that it worked perfectly. He admitted that he had not tested the system. He also inspected the system at plaintiff's house, but it was not working and he did not see an outlet pipe running close to woodwork.

Evidence was also given by Mr. *Dennison*, Chief of the National Radiator Company's laboratories at Hull, that his Company supplied the radiators for Mr. Taylor's system. He stated that the system fathered by Mr. Barker was a safe one. His Company had experimented with it, and it was now developed, although, of course, improvements might yet be suggested. His Company had not advertised the system as they were only makers of parts of it.

Col. *Buckle*, C.B.E., C.B., Managing Director of Messrs. Ellis & Buckle, Ltd., fire assessors to Lloyd's, speaking of the installation at Pont Street and his examination of the drawings of the system, said he had seen the same system at the South Metropolitan Gas Company's premises. The system showed a surprising degree of technical skill which had been evidenced in the safety device. It was a low-temperature system of radiation, and each gas radiator had one small bunsen burner only. He did not consider the door to the pilot jet dangerous, but he had suggested an improvement by which the door would automatically drop, a change which would only cost a few shillings per radiator. In cross-examination, he said he asked that the system at Pont Street should be lighted, but Mr. Barker said as it had been derelict for some time he would not take the responsibility without adjustments which might take a day to carry out. The flame in the radiator would remain steady when adjusted unless tampered with.

Asked his opinion of Mr. Barker's system in the face of a report to an insurance company that it was dangerous, he replied that he thought it was the safest system to adopt and the safest system of control heating by gas that he had seen. Gas radiation was the last word in heating installations.

Mr. *John Cooling*, M.Sc., of Manchester University, and Director of Messrs. Jefferys & Co., who has been engaged in heating and engineering since 1911, said he inspected the installation at Pont Street, and he was of opinion that the gas burner properly adjusted should not make a disturbing noise. There was no normal danger of fire, and the system was not difficult to operate.

Mr. *Hugh P. Barker*, defendant's son, and Managing Director of Electro Gas Development, Ltd., and Barker, Young, & Co., said he had interested himself in experiments in gas heating. The system in the Pont Street house was in order and proper to run.

This concluded the evidence, and it was agreed that his Lordship should deal with the question of damages should the jury find for the plaintiff.

JUDGMENT.

After an absence of four hours, the jury found for Mr. Barker on the first question, which was: "Was the plaintiff induced

to install the system by any untrue or fraudulent statement by defendant?" But they disagreed upon the two other questions, which were: "Did plaintiff employ defendant as his consulting engineer?" and "If so, was the defendant guilty of negligence in advising the system he did, and, if so, in respect of what matters?"

His LORDSHIP entered judgment for Mr. Barker on the issue of fraud, with costs, and stayed the other two issues to await a new trial. He also gave leave to appeal on the usual terms, providing notice was entered within 21 days.

Carrickfergus Gas Company's Petition.

In the Ulster Chancery Division Mr. Justice Megaw fixed the first summons day of next sitting for the hearing of a petition by the Carrickfergus Gas Company under the Companies' Act, 1932, for an alteration of the form of the constitution of the Company by the substitution of a memorandum and articles for a deed of settlement and the extension of the objects of the Company. The Company was established by deed of settlement on Nov. 9, 1854, for the manufacture and sale of gas for lighting purposes, and it was now sought to extend the powers of the Company to enable them to supply gas for heating and power purposes, and to supply and sell stoves, &c. The necessary special resolution was passed unanimously on May 29, 1933.

Mr. Justice MEGAW asked how the Company had managed to carry on so long without the powers now asked for.

COUNSEL replied that he did not know. The sole debts of the Company were £280 and current wages, and the assets were £17,000. He did not think the petition would injure the creditors.

Mr. Justice MEGAW said that was what he had got to ascertain. The petition would seem to be to the advantage of everyone connected with the Company. Still one had to give people the chance to appear.

PARLIAMENTARY INTELLIGENCE

[From Our Special Correspondents.]

House of Lords.

Private Bills.

The Commercial Gas Bill received the Royal Assent on July 19.

House of Commons.

Private Bills.

The South Metropolitan Gas Bill has been reported from Committee, with an amendment; the Report ordered to lie upon the Table and to be printed. The Bill, as amended, was considered by the House of Commons on July 24.

The Lords amendments to the Gas Light and Coke Company's Bill have been considered by the House of Commons and agreed to.

The East Hull Gas Bill has been considered, as amended, and is to be read a third time.

Special Orders.

Plans were deposited on July 24 for the Falmouth Gas Order, in accordance with the Gas Undertakings Acts.

Oil from British Coal.

Answering Mr. BATEY (Spennymoor, Lab.), in the House of Commons on July 19,

Mr. WALLACE, Civil Lord of the Admiralty (Hornsey, U.), said: The quantities of oil produced by the low-temperature carbonization and hydrogenation of coal purchased by the Admiralty were: In 1929, 20 tons; 1930, 540 tons; 1931, 224 tons; 1932, 570 tons; and 1933, 3025 tons. Offers of oil of suitable quality produced from coal will always be considered provided the price is satisfactory.

Mr. BATEY asked whether it was intended to go on increasing that quantity.

Mr. WALLACE: Yes, if the price is satisfactory.

Mr. BATEY asked the Under-Secretary for Air whether any of this class of oil had been purchased for use by the Royal Air Force.

Sir P. SASSOON (Hythe, U.): Yes, Sir. As a full-scale experiment one home defence squadron is flying solely on petrol extracted from British coal.

South Metropolitan Gas Bill.

The Bill promoted by the South Metropolitan Gas Company was before the Unopposed Bills Committee of the House of Commons (presided over by the Chairman of Ways and Means, Capt. R. C. Bourne) on Wednesday, July 19, and was ordered to be reported for third reading.

Mr. A. B. WINSER (Messrs. Sherwood & Co., Parliamentary Agents) said the only object of the Bill was to repeal the provisions in the Company's Acts which required that new capital should be issued by public auction or tender. It was not sought by this Bill to authorize additional capital.

Mr. Winser drew attention to a report of the Gas Legislation Committee, which had been issued since the Bill was deposited, and which stated there could be little doubt that the operation of the auction clauses hampered undertakers in their endeavours to raise capital and deterred many investors from applying for shares or stock.

When the Bill was in the House of Lords, amendments were made which were satisfactory to the Board of Trade. There was provision in the Bill, by arrangement with the Board, to the effect that the price at which the Company issued capital should not be less than a price to which the Board should have assented, having regard to the terms and conditions on which the issue was made. The whole object of the auction clauses, he added, had been to prevent the issue of capital at an abnormally low rate.

A sub-clause to the effect that nothing in the Bill should affect any power of the Company to pay brokerage, was the subject of some questions by the Committee, and at Mr. Winser's suggestion it was deleted. It had been pointed out by the Chairman that there was nothing in the Bill to determine how much brokerage the Company could pay. Mr. Winser said that neither was there in the Company's existing Acts. Under this Bill the Board of Trade would have before it all the material factors when assenting to a price below which the Company should not issue; brokerage was one of those material factors. The prospectus would go to the Board of Trade, and on it there would be stated the amount of any brokerage which the Company agreed with the underwriters to pay.

The preamble of the Bill was proved by Mr. F. Day (Secretary to the Company), and the Bill was ordered to be reported for third reading.

Halifax Gas Profits Doubled.

Price Reduction to be Considered.

The accounts of the Halifax Gas Department for the year ended March 31 last showed a net profit of £15,284, compared with £8310 the previous year. As a result of the gratifying report a Sub-Committee was appointed to consider the question of gas charges, with a view to reducing them.

The report states that the expenditure was £170,484, a decrease on the previous year of £6398. The income for the same period was £185,768, an increase of £576. The gross profit was £53,257, compared with £47,658 the previous year. Payments of a special character, amounting to £10,494, were made from the appropriation account.

The amount in the reserve fund account was increased to £14,892 by the addition of £507 interest, and £150 bonus on conversion of 5% war loan. The high-pressure lighting account shows a profit of £108, as compared with a loss of £263 the previous year. The income for gas from this class of lighting was £754. From residual products the total net receipts amounted to £29,780, compared with £26,844 for 1931-32, an increase of £2936.

The total expenditure on loan account now stands at £698,085, and, in addition, the sum of £88,909 has been spent out of revenue on plant and works of a capital nature; the latter item has been depreciated to the extent of £56,782 for balance-sheet purposes.

The net cost at works for the production of gas was 22·26d. per 1000 c.ft. sold, as compared with 22·98d. in the previous year. The cost of distribution was 11·87d., compared with 13·22d. the previous year. The total amount of salaries and wages paid during the year 1932-33 was £45,686, a decrease of £765 on the previous year. The number of staff under the control of the Committee was 344, an increase of 22.

Mr. W. B. McLusky, the Engineer and Manager, in his report, states: The quantity of gas sold for the period was 906,051,900 c.ft., compared with 909,161,800 c.ft. during the previous year. The receipts for gas amounted to £144,133, or 3s. 2·18d. per 1000 c.ft. of gas sold, compared with £145,438, or 3s. 2·40d. per 1000 c.ft. for the previous year.

The demand for gas appliances continues. The total number of cooking and heating appliances in use in the Halifax area at March 31 last was 62,025—an increase of 1452 for the year. The number of such appliances in use 20 years ago was 6200. All the appliances in use are now inspected and maintained by the Corporation. Most of this work is done on the consumers' premises, but it is found necessary to remove a number of the appliances to the workshops for reconditioning and renovation. During the twelve months 2069 appliances were dealt with in these repair shops.

General Gas and Electricity Company.

The General Gas and Electricity Company, Ltd., held their Ordinary General Meeting at the Offices of the Company, 50, Cannon Street, E.C. 4, on Thursday, July 13.

The CHAIRMAN (Mr. W. A. Scott) in his speech referred to recent reconstruction of the Board and gave a *résumé* of the events leading up to it. For forty years or more, he said, a number of small gas and electricity companies under his Chairmanship were operated from that office with good results; but further development and expansion of these Companies was hindered by lack of capital. In the autumn of 1930 he was approached by Americans desirous of acquiring interests in gas and other public utility companies and who were forming a Company for that purpose. Having regard to the need of capital for expansion and on the promises and assurances received from the promoters that the new company and the companies acquired by it would be carried on in this office as hitherto under the same management and under his direction as Chairman with one Board of Directors, he decided that it was in the interest of the shareholders to agree to transfer their shares in the smaller companies for those of this company, and advised them accordingly.

After the Company had been formed and he was appointed to the Board, he found that the promoters had secured to themselves absolute control by holding the majority of the voting power—namely, 74,250 deferred 1s. shares and 25,000 ordinary £1 shares each carrying one vote. The promoters proceeded to form their own Board, with the exception of Mr. W. S. Coles and himself, and he was not, as promised, appointed Chairman. Mr. W. S. Coles died in October last, and since that date the Company had been carried on by a depleted Board of only three members, including himself and two who were representative nominees of the promoters. The Company paid no ordinary dividend until March 31, 1932, when 2½% was declared. The dividend recommended for the year ended March 31, 1933, was 3%.

As he felt a moral responsibility to those shareholders who had surrendered their holdings in the subsidiary companies, he considered it incumbent on him to make an offer to the holders of the controlling shares (who were resident in America) to purchase the whole of their holdings for the sum of £30,000, and he was pleased to inform them that the purchase was completed on June 20.

The Board of Directors had been entirely reconstituted, and the following gentlemen who were well known and had been associated with most of the Company's subsidiaries for a considerable time had been appointed to the Board:

Mr. W. A. Scott, F.C.A., J.P., Chairman and Joint Managing Director.

Mr. H. T. Manwaring, Joint Managing Director.

Lt.-Col. W. Bridges, M.Inst.C.E., M.I.Mech.E., M.I.E.E.

Mr. A. E. Scott.

Mr. H. C. Walker, M.I.Mech.E.

He felt that it was an objection for the Company to be controlled by one person or group, and proposed to take the necessary steps to abolish the 1s. deferred shares which gave the American holders an absolute control, and which he now held so that the Company might be controlled by, and in the interests of, the shareholders generally.

The recent changes in management and the saving already effected would, he confidently anticipated, be reflected in increased dividends, and the objects he first had in view of grouping the various smaller companies into one larger company would now, he believed, go forward with greater success, and he looked forward to a prosperous future.

Gas Companies' Results in 1932.

Boston.

The annual report of the Boston Gas Light and Coke Company, which was presented at the Annual Meeting of the Company on July 20—Alderman T. Kitwood presiding—showed that the net profit for the year amounted to £3330. The balance standing to the credit of the profit and loss account (net revenue) after payment of the interim dividend in February last, amounted to £4892, out of which sum the Directors recommended the payment of the remainder of the dividend on both classes of shares at the usual rates—namely, 8½% and 7%, and the transfer of £378 to the reserve fund. These appropriations amounted to £1409, and left a balance to be carried forward to next year's account of £3482. In pursuance of the Company's policy of supplying gas at the lowest practicable figure, the Directors decided in February last to make a further reduction in the price charged for gas—viz., 0·4d. per therm, making, with the previous reductions, a total reduction of 1·4d. per therm from the standard price, being equivalent to a total reduction of 6·4d. per 1000 c.ft. The gas rental for the year amounted to £30,942, which showed a decrease of £1999 compared with the previous year, of which the sum of £1534 was due to decreases in the prices charged for gas. The residuals realized £7821, showing an increase on the year of £277. The number of cookers on hire and hire-purchase at June 30 was 4445. There was an increase in the number of ordinary and repayment meters of 92. The total meters fixed was 2548 ordinary and 4075 prepayment—in all 6623.

Corporation Undertakings' Results.

Burnley.

The financial result of the year's working is a gross profit of £53,540, and a net profit of £16,540 after due payment of capital charges, in comparison with £47,400 and £10,102 respectively last year. The total expenditure during the year has been £144,067, against £141,255 during the year 1931-32; and the income has been £160,607, against £151,357 the previous year. The make of gas during the year has been 485,552,000 c.ft. of coal gas, and 20,110,000 c.ft. of carburetted water gas. The Department have purchased 541,925,786 c.ft. of coke oven gas, making a total figure of 1,047,587,786 c.ft., compared with 1,013,206,000 c.ft. during the previous year. The gas sent out has been 1,046,980,786 c.ft., or 5,234,904 therms, against 1,012,283,000 c.ft., or 4,808,343 therms, during the previous year. The net receipts for residuals, after deduction of expenses in the working up of the bye-products, are £18,006, compared with £15,885 the previous year. This results in a return of 11s. 4·34d. per ton of coal carbonized, against 11s. 8·72d. per ton last year, and 10s. 7·86d. the previous year. The amount of coke produced during the year has been 15,524 tons, and 10,872 tons have been sold, against 10,230 tons sold last year. The net income is £13,607. The quantity of tar produced during the year has been 1554 tons, compared with 1467 tons produced last year; 41 tons have been sold in the crude, 2005 tons distilled, and dehydrated. 921 tons have been purchased from other gas undertakings.

Macclesfield.

There has been an increase in the consumption of gas amounting to 137,690 therms, which is 8·57% above last year's figures. The prepayment system now amounts to 48·8% of the whole consumption, and shows an increase of 5·2% above last year's consumption. The total quantity of gas sold during the year was:

Therms.

Ordinary.	Prepayment.	Public Lamps.	Total.	Increase.
826,758	850,864	80,042	1,757,664	138,091

The average price for all gas supplied amounts to 5·399d. per therm net. After paying £3548 towards the interest and sinking fund the net profit for the year was £678. During the year 148 new service pipes were laid and new meters fixed; the total number of meters in use at the end of the year being 10,850—an increase of 78 on the previous year.

Trade Notes.

Vertical Gas Retort Syndicate.

The Stane and Dykehead Gas Company, Ltd., have placed an order with the Vertical Gas Retort Syndicate, Ltd., of 17, Victoria Street, Westminster, S.W. 1, for an improved type "Simplex" water gas plant.

Waller Boosting Fans.

Messrs. George Waller & Son, Ltd., of Stroud, advise us that, in addition to the list of gas-works where they have recently supplied boosting installations, they have also supplied six sets of electrically-driven boosting fans of various capacities to the Cheltenham Gas Company.

John Terry's of Regent Street, Ltd.

Messrs. John Terry & Co., of 296, Regent Street, W. 1, inform us that they have converted their business into a Limited Company bearing the above name. The conversion has been carried out for family reasons, and the whole of the shares of the Company are appropriated to themselves as fully paid up in substitution for their interests in the business. The Directors of the Company are Mr. John H. Terry, Mr. H. C. Terry, and Mr. H. A. Cox, F.C.A. Mr. H. C. Terry has been appointed to the office of Managing Director. The conversion will not affect the general conduct of the business, which will be carried on as heretofore.

New Battery of Coke Ovens for Grassmoor Collieries.

An order has been placed with Messrs. Simon-Carves, Ltd., of Cheadle Heath, near Manchester, by Messrs. the Grassmoor Company, Ltd., for a battery of twenty coke ovens, a coal handling plant, and a coal storage bunker. The ovens are to be erected at the Grassmoor Collieries, near Chesterfield, and will replace a battery of waste-heat ovens. The new ovens will be of the well-known twin-flue "Underjet" regenerative type, designed to produce a maximum of surplus gas, and will be capable of carbonizing 380 tons of coal per day. The ovens will be similar to the battery of thirty being built by Messrs. Simon-Carves at Manvers Main Colliery.

GAS MARKETS & MANUFACTURES

Stock Market Report.

[For Stock and Share List, see later page.]

The speculative atmosphere which has been a feature for the past week or so came to an end last week, and stock markets reverted to more normal conditions. The bulk of the business constituted genuine investment buying, debenture and preference shares of sound companies being much in demand, while a noticeable feature was the recovery in British Government stocks.

The security offered in the Gas Market appeals very strongly to the genuine investor, so that the general situation at the present time has led to a marked increase in the volume of business in this section. All classes of stocks have been in demand, and it will be seen in the Stock and Share List that with the exception of Gas Light units, which eased 3d. to 26s. 3d., all price changes were in an upward direction. Among ordinary stocks on offer at the present time, leaving out those of the larger undertakings usually obtainable, there are several which, although not quoted in the Official List, give ample security—*e.g.*, £216 Mid-Kent Gas (£10 shares) is offered at 9¾, yielding £4 12s. 6d., £1598 Shanklin and Ventnor Gas at 162 on a dividend of 8% yields £4 18s., £100 Taunton Gas at 180 pays 5%, and £450 Rochester, Chatham, and Gillingham at 141 on a 6½% basis yields £4 12s. 2d. Among preference issues there is on offer £1473 Romford Gas 4% at 103; this stock is redeemable in 1958, and the flat yield works out at £3 17s. 8d. 1000 South-Eastern Gas Corporation £1 4½% cumulative preference shares, redeemable at par in 1980 or after 1970 at 20s. 6d., are attractive at 22s., and yield £4 2s., while a parcel of Woking District 5% "C" at 115 pays £4 7s.%. Among permanent debentures the following are on offer: £1000 Barnsley 5% at £130 yielding £4 5s., £8715 Oxford 4% at 104 (free of stamp duty) paying £3 17s., and £10,000 Reading 4% at 108, also free of stamp duty, yielding at this price £3 17s. 6d.

The Directors of the Wandsworth and District Gas Company are offering for sale by tender £275,000 5% preference stock at a minimum price of £115%, at which price the yield works out at £4 6s. 11d.%. The stock will rank *pari passu* with the existing preference stock and dividends will be payable on March 1 and Sept. 1, four months' dividend to Dec. 3 next being payable on March 1, 1934. The last day for receipt of tenders is Aug. 1, as will be seen from our advertisement columns.

Current Sales of Gas Products.

The London Market for Tar Products.

LONDON, *July* 24.

The market for tar products continues steady, current prices are as under:

Pitch, 80s. per ton f.o.b.

Creosote, 3d. per gallon.

Refined tar, 4d. to 4¼d. per gallon in bulk at makers' works.

Pure toluole is firm at about 2s. 5d.; pure benzole, 1s. 9d.; solvent naphtha, 95/160, 1s. 7d.; and 90/140 pyridine bases, about 4s. 3d., all per gallon naked at makers' works.

Tar Products in the Provinces.

July 24.

The average prices of gas-works products during the week were: Gas-works tar, 31s. 6d. to 36s. 6d. Pitch—East Coast, 77s. 6d. to 80s. f.o.b. West Coast—Manchester, Liverpool, Clyde, 77s. 6d. to 80s.* Toluole, naked, North, 1s. 9d. to 1s. 10d. Coal-tar crude naphtha, in bulk, North, 6d. to 6¼d. Solvent naphtha, naked, North, 1s. 5½d. to 1s. 6d. Heavy naphtha, North, 10d. to 11d. Creosote, *ex* works, in bulk, North, liquid and salty, 2d. to 2½d.; low gravity, 2d.; Scotland, 2d. to 2½d. Heavy oils, in bulk, North, 4d. to 4¼d. Carbolic acid, 60's, 2s. 7½d. to 2s. 9d. Naphthalene, £9 to £10. Salts, 55s. to 75s., bags included. Anthracene, "A" quality, 2¼d. per minimum 40%, purely nominal; "B" quality, unsalable.

* All prices for pitch are now quoted on the basis of f.o.b. In order to arrive at the f.a.s. value at any port it will be necessary to deduct the loading costs and the tolls whatever they may be.

Tar Products in Scotland.

GLASGOW, *July* 22.

Business has been rather dull in this district during the week, but prices are well maintained.

Crude gas-works tar.—Actual value remains at 42s. 6d. to 47s. 6d. per ton *ex* works.

Pitch.—Export value is nominal at 75s. to 77s. 6d. per ton f.o.b. Glasgow. Price for delivery in the home market is steady at 75s. per ton f.o.r. in bulk.

Refined tar to Ministry of Transport Specification continues in good call at 3¼d. per gallon *ex* works in buyers' packages.

Creosote oil.— Buyers are holding off, but quotations are unchanged. B.E.S.A. Specification is 2⅞d. to 2¾d. per gallon; low gravity, 2⅞d. to 2⅝d. per gallon; and neutral oil, 2⅝d. to 2⅝d. per gallon—all in bulk *ex* works.

Cresylic acid.—Price level remains unaltered and orders are scarce. Pale, 97/99%, is 10d. to 11d. per gallon; dark, 97/99%, 9d. to 10d. per gallon; and pale, 99/100%, 1s. 1d. to 1s. 2d. per gallon—all f.o.r. in buyers' packages.

Crude naphtha.—Value is round 4d. to 4½d. per gallon *ex* works in bulk with supplies scarce.

Solvent naphtha.—90/160 grade is 1s. 3d. to 1s. 4d. per gallon, and 90/190 grade 11d. to 1s. per gallon *ex* works.

Motor benzole is nominal at 1s. 5d. per gallon f.o.r.

Pyridines.—90/160 grade is 3s. to 3s. 3d. per gallon, and 90/140 grade 3s. 3d. to 3s. 6d. per gallon.

Benzole Prices.

These are considered to be the market prices for benzole at the present time:

	s.	d.		s.	d.	
Crude benzole	0	9	to	0	9½	per gallon at works
Motor ,,	1	4	,,	1	4½	,, ,, ,,
Pure ,,	1	7½	,,	1	8	,, ,, ,,

Contracts Advertised To-Day.

Pipes, &c.

Bradford Corporation Gas Department. [p. 222.]

Stores, Oils, Grease, &c.

Bradford Corporation Gas Department. [p. 222.]

Brass Cocks.

Bradford Corporation Gas Department. [p. 222.]

Tar and Bitumen.

Local Government and Public Health (Trade Department), Dublin. [p. 222.]

Gasholder Removal and Replacement.

Glasgow Corporation Gas Department. [p. 222.]

New Capital Issues.

Wandsworth and District Gas Company.—As will be seen from our advertisement columns, to provide funds for the repayment of bankers' loans and for meeting the cost of additional mains, appliances, &c., necessitated by the continued rapid development of the business, the Wandsworth and District Gas Company is offering for sale by tender £275,000 5% preference stock in amounts of £5 or multiples thereof. The minimum price of issue is 115%, at which the yield would be £4 6s. 11d.%. Since Jan. 1, 1930, when the various stocks were consolidated into one class, the dividend has been 7% per annum. After payment of debenture and other interest for the year 1932 and of the dividend on the preference and consolidated stocks for the first half of that year, there remained £115,504 available for payment of dividends to Dec. 31, 1932. Prospectuses may be obtained from the Company at Fairfield Street, Wandsworth, S.W. 18, or at any of the showrooms; at branches of Barclays Bank, or from Seymour, Pierce, & Co., 5, Lothbury, E.C. 2.

Gas Acts (1920 and 1929) Orders.

SPECIAL ORDER.

Falmouth Gas Company.

To authorize the Company, among other provisions, to hold and use certain land for gas-works purposes.

STOCK AND SHARE LIST.

Official Quotations on the London and Provincial Stock Exchanges.

Issue. £	Share.	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations July 21.	Rise or Fall on Week.	Transactions. Lowest and Highest Prices During the Week.
1,551,868	Stk.	Apl. 3	7⅞	7	Alliance & Dublin Ord. ...	120—130	...	...
374,000	,,	July 10	4	4	Do. 4 p.c. Deb. ...	85—95*	...	...
557,655	,,	Mar. 6	7	7	Barnet Ord. 7 p.c.	157—162	...	161½
300,000	1	May 8	1/4⅛	1/9⅜	Bombay, Ltd.	25/—27/-	...	25/9—26/3
178,280	Stk.	Feb. 20	9½	9½	Bournemouth sliding scale	195—205	...	...
550,050	,,	,,	7	7	Do. 7 p.c. max. ...	157—162	...	161—162
439,160	,,	,,	6	6	Do. 6 p.c. Pref. ...	137—142	...	...
50,000	,,	June 26	3	3	Do. 3 p.c. Deb. ...	74—79	...	...
162,025	,,	,,	4	4	Do. 4 p.c. Deb. ...	99—104	...	...
210,000	,,	,,	5	5	Do. 5 p.c. Deb. ...	120—125	...	120½—122½
357,900	,,	Mar. 6	7½	7½	Brighton, &c. 6 p.c. Con. ...	153—158	+1	155
540,000	,,	,,	6⅔	6⅔	Do. 5 p.c. Con. ...	142—147	...	145½—146½
195,500	,,	,,	6	6	Do. 6 p.c. B Pref.	133—138	...	134—136½
1,487,500	,,	Mar. 6	5	5	Bristol 5 p.c. max.	110—111*a*	...	...
120,420	,,	June 26	4	4	Do. 1st 4 p.c. Deb. ...	99—100*a*	...	...
217,870	,,	,,	4	4	Do. 2nd 4 p.c. Deb. ...	99—100*a*	...	...
328,790	,,	,,	5	5	Do. 5 p.c. Deb.	119—122*a*	...	...
855,000	,,	Apl. 3	7	8	British Ord.	147—152	...	146⅞—151
100,000	,,	June 26	7	7	Do. 7 p.c. Pref.	145—150	+1	149—150
350,000	,,	,,	5½	5½	Do. 5½ p.c. Pref. ...	108—113	...	...
120,000	,,	,,	4	4	Do. 4 p.c. Red. Deb. ...	94—99	...	...
450,000	,,	,,	5	5	Do. 5 p.c. Red. Deb. ...	103—113	...	...
160,000	,,	June 26	5	5	Cambridge 5 p.c. Deb. ...	115—120	...	...
100,000	10	May 22	6	4	Cape Town, Ltd.	7—8	...	...
100,000	10	Apl. 24	4½	4½	Do. 4½ p.c. Pref. ...	6—7	...	...
150,000	Stk.	June 26	4½	4½	Do. 4½ p.c. Deb. ...	87—92	...	...
626,860	,,	Feb. 20	6	6	Cardiff Con. Ord.	119—124	...	...
237,860	,,	June 26	5	5	Do. 5 p.c. Red. Deb.	105—110	...	...
157,150	,,	Feb. 20	5	6½	Chester 5 p.c. Ord.	107—112*b*	...	...
98,936	1	May 22	2/-	2/-	Colombo, Ltd. Ord.... ...	25/—30/-	...	...
21,500	1	,,	1/4⅛	1/4⅛	Do. 7 p.c. Pref. ...	18/6—20/6	...	...
609,204	1	Mar. 20	-/11'48	-/11'48	Colonial Gas Assn. Ltd. Ord.	17/6—20/-	...	...
296,053	1	,,	1/3'30	1/3'30	Do. 8 p.c. Pref.	1 7/8—1 15/16	...	...
1,796,955	Stk.	Feb. 20	5	6½	Commercial Ord.	112—117	...	112½—114
475,000	,,	June 12	3	3	Do. 3 p.c. Deb. ...	73—78	−1	73—75½
265,272	,,	Mar. 6	—	5	Do. 5 p.c. Deb. ...	120—125	...	...
807,560	,,	Feb. 20	7	7	Croydon sliding scale ...	145—150	...	146
469,590	,,	,,	5	5	Do. max. div.	101—106	...	...
500,000	,,	July 10	5	5	Do. 5 p.c. Deb.	118—123*	...	...
542,270	,,	Mar. 6	7	10	Derby Con.	155—165*c*	+5	...
55,000	,,	July 10	4	4	Do. 4 p.c. Deb.	93—98*c*	+12½	...
209,000	,,	Mar. 6	5	5	East Hull Ord. 5 p.c. ...	106—111	...	...
179,500	,,	Mar. 6	6	6	East Surrey Ord. 5 p.c. ...	122—127	+2	125
155,019	,,	June 26	5	5	Do. 5 p.c. Deb. ...	115—120	...	...
1,002,180	,,	Apl. 3	†5	†7	European, Ltd.	131—136	...	135
19,373,992	,,	Feb. 20	5⅝	5⅝	Gas Light & Coke 4 p.c. Ord.	25/9—26/9*f*	−/3	25/10½—26/7½
2,600,000	,,	,,	3½	3½	Do. 3½ p.c. max.	85—88	...	85½—85¾
4,477,106	,,	,,	4	4	Do. 4 p.c. Con. Pref. ...	99—102	...	100½—102
6,102,497	,,	June 12	3	3	Do. 3 p.c. Con. Deb. ...	76—79	...	77—78½
3,642,770	,,	,,	5	5	Do. 5 p.c. Red. Deb. ...	113—116	...	113—115½
3,500,000	,,	,,	4½	4½	Do. 4½ p.c. Red. Deb. ...	110—113	...	112—113
270,466	,,	Mar. 6	6	6	Harrogate New Cons. ...	115—120	...	...
82,500	,,	Mar. 6	7	7	Hastings & St. L. 5 p.c. Conv.	138—143	...	...
258,740	,,	,,	5½	5½	Do. 3½ p.c. Conv.	110—115	...	...
70,000	10	Apl. 24	†10	†10	Hongkong & China, Ltd. ...	14—15	...	...
213,200	Stk.	Mar. 6	6	6	Hornsey Con. 3½ p.c. ...	122—127	...	...
5,600,000	,,	May 22	10	14	Imperial Continental Cap.	212—222	...	214½—217½
223,130	,,	Feb. 6	3½	3½	Do. 3½ p.c. Red. Deb.	89—94	...	...
235,242	,,	Mar. 6	8½	8½	Lea Bridge 5 p.c. Ord. ...	170—175	...	172
2,145,907	,,	Mar. 6	6	6	Liverpool 5 p.c. Ord. ...	125⅝—126⅜*b*	...	...
245,500	,,	June 26	5	5	Do. 5 p.c. Red. Pref. ...	103—113*b*	...	...
306,083	,,	July 17	4	4	Do. 4 p.c. Deb. ...	99½—101½*b**	−1½	...
165,736	,,	Feb. 20	8	10	Maidstone 5 p.c. Cap. ...	180—200	...	...
56,176	,,	July 10	3	3	Do. 3 p.c. Deb. ...	69—74*	...	...
75,000	5	June 12	†10	†10	Malta & Mediterranean ...	9—11	...	...
392,000	—	Apl. 1	5½	5½	Metropolitan (of Melbourne) 5½ p.c. Red. Deb.	98—103	...	...
231,978	Stk.	Mar. 6	5	5	M. S. Utility "C." Cons. ...	103—108	...	...
818,657	,,	,,	4	4	Do. 4 p.c. Cons. Pref.	93—98	...	96½—97⅝
112,126	,,	June 26	4	4	Do. 4 p.c. Deb. ...	100—102	...	...
148,955	,,	,,	5	5	Do. 5 p.c. Deb. ...	113—118	...	...
675,000	,,	21 May '31	16	16	Montevideo, Ltd.	55—65	...	57½
2,061,815	,,	Mar. 6	5	5½	Newcastle & Gateshead Con.	24/6—25/6*d*	...	...
682,856	,,	,,	4	4	Do. 4 p.c. Pref. ...	99—101*d*	...	...
776,706	,,	July 10	3½	3½	Do. 3½ p.c. Deb. ...	91—93*d**	...	...
277,285	,,	May 8	5	5	Do. 5 p.c. Deb. '48...	107—109*d*	...	...
274,000	,,	Feb. 20	5	5	Newport (Mon.) 5 p.c. max.	102—104*a*	...	...
204,940	,,	Mar. 20	7½	7½	North Middlesex 6 p.c. Con.	137—143	...	139
396,160	,,	Feb. 6	5	5	Northampton 5 p.c. max. ...	103—108	...	...
300,000	,,	Apl. 24	9	7	Oriental, Ltd.	114—119	...	...
316,617	,,	June 26	8	8	Plym'th & Stonehouse 5 p.c.	158—163	...	160
504,416	,,	Feb. 20	8	8	Portsm'th Con.Stk. 4 p.c.Std.	161—166	...	163—165
241,446	,,	,,	5	5	Do. 5 p.c. max. ...	104—109	...	114½
114,000	,,	Feb. 20	5	5	Preston 5 p.c. Pref.	103—108	...	...
686,312	,,	Jan. 23	4	4	Primitiva 4 p.c. Rd. Db. 1911	82—87	+2	...
389,813	,,	June 26	4	4	Do. 4 p.c. Cons. Deb.	82—87	+4	...
150,000	10	Mar. 20	6	6	San Paulo 5 p.c. Pref. ...	6⅞—7⅛	...	...
1,736,968	Stk.	Sept. 5	6	6	Sheffield Cons.	124—128*e*	...	...
95,000	,,	July 10	4	4	Do. 4 p.c. Deb.	90—94*e**	...	...
133,201	,,	Feb. 20	8½	5	Shrewsbury 5 p.c. Ord. ...	125—130	...	...
90,000	10	June 12	15	14	South African	3—5	...	...
6,709,895	Stk.	Feb. 20	5	7	South Met. Ord.	127—130	+1	127—130
1,135,812	,,	,,	6	6	Do. 6 p.c. Irred. Pf.	135—140	...	136—137½
850,000	,,	,,	—	20/-*g*	Do. 4 p.c. Irred. Pf.	99—103	...	100¼—101½
1,895,445	,,	July 10	3	3	Do. 3 p.c. Deb. ...	75—78*	...	76—77
1 000,000	,,	Jan. 23	5	5	Do. 5 p.c. Red. Deb.	112—116	...	114
209,820	,,	Mar. 6	8½	8½	South Shields Con.	149—151*d*	...	...
1,543,795	,,	Feb. 20	6	6	South Suburban Ord. 5 p.c.	124—129	...	127—128½
300,000	,,	,,	5	5	Do. 5 p.c. Pref.	113—118	...	113—115
868,837	,,	June 26	5	5	Do. 5 p.c. Deb.	118—123	...	120—121
647,740	,,	Feb. 20	5	5	Southampt'n Ord. 5 p.c. max.	107—112	...	...
121,275	,,	June 26	4	4	Do. 4 p.c. Deb.	99—104	...	...
350,000	,,	Mar. 6	9/-	5½	Swansea 5½ p.c. Red. Pref.	109—113	...	111—111½
200,000	,,	June 26	6½	6½	Do. 6½ p.c. Red. Deb.	103—108	...	...
1,076,490	,,	Mar. 6	6⅔	6⅔	Tottenham and District Ord.	142—147	...	144½
300,000	,,	,,	5½	5½	Do. 5½ p.c. Pref. ...	123—128	...	124—126⅝
62,235	,,	,,	5	5	Do. 5 p.c. Pref. ...	110—115	...	...
199,005	,,	June 12	4	4	Do. 4 p.c. Deb. ...	96—101	...	...
85,701	,,	Apl. 3	6	6	Tuscan, Ltd., 6 p.c. Red. Db.	80—85	...	...
347,769	,,	Mar. 6	7	7	Uxbridge, &c., 5 p.c. ...	140—145	...	142
88,330	,,	,,	5	5	Do. 5 p.c. Pref. ...	110—115	...	...
1,322,220	,,	July 10	7	7	Wandsworth Consolidated	142—147*	...	145
1,096,373	,,	,,	5	5	Do. 5 p.c. Pref.	112—117*	+2	114½—115
1,317,964	,,	June 26	5	5	Do. 5 p.c. Deb.	118—123	...	...
158,400	,,	Mar. 6	5	6A	Winchester W.&G.5p.c.Con.	109—114	...	...

Quotations at:—*a.*—Bristol. *b.*—Liverpool. *c.*—Nottingham. *d.*—Newcastle. *e.*—Sheffield. *f.*—The quotation is per £1 of stock. *g.*—For quarter. *h.*—Paid £3, including 10s. on account of back dividends. *Ex. div. † Paid free of income-tax. ‡ For year.

THE WANDSWORTH AND DISTRICT GAS COMPANY.

Offer for

SALE BY TENDER

OF

£275,000

5 per cent.

PREFERENCE STOCK

Minimum Price of Issue £115 per £100 Stock.

The Directors invite Tenders for the above Stock, in pursuance of powers granted by Section 39 of the Wandsworth and District Gas Order, 1931.

Tenders must be accompanied by a deposit of 10% of the Nominal amount of the Stock, and the balance paid on or before the 31st August 1933.

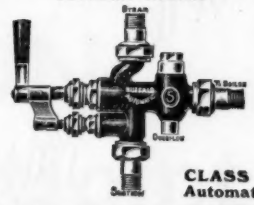
Dividend accrues as from the 1st September, 1933.

Particulars of Sale and Tender Forms can be obtained from the Secretary, The Wandsworth and District Gas Company, Fairfield Street, Wandsworth, S.W. 18; Barclays Bank Limited, 54, Lombard Street, London, E.C.3, and Branches; or Messrs. Seymour, Pierce & Company, 5, Lothbury, London, E.C.2, who have agreed to underwrite this issue for a commission of 1¼ per cent.

By Order of the Board,
W. H. CROMARTY,
Secretary.

LAST DAY FOR RECEIPT OF TENDERS,
12 o'clock noon, TUESDAY, 1st August, 1933.

BUFFALO INJECTOR
(British Made)



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Automatic

Operated entirely by one handle

GREEN & BOULDING, LTD.,
162a, DALSTON LANE, LONDON, E. 8.

CAST IRON PIPES

FOR

GAS, WATER, & STEAM

1¼in. to 12in. BORE.

THOS. ALLAN & SONS, LTD.,
Bonlea Foundry,
THORNABY-ON-TEES.

Telegrams: "BONLEA, THORNABY-ON-TEES."
Telephone No.: STOCKTON 66121 (Two lines).

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GAS·METERS

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THERMS for LIGHT, HEAT & POWER

Whether engaged on long hours of steady routine with the **LIGHT** Brigade or on a rush over the top with the geysers in the **HEAT** of the moment, Sergeant A. & M. Meters always has the **POWER** to control Your Therms.

ALDER & MACKAY
LIMITED

MAKE METERS OF METICULOUS MEASUREMENT

A. & M.
HIGH CAPACITY
METERS

These meters are designed and constructed for long and exacting service under modern conditions. Pressure losses at capacity are unusually small and registration is precise over a very large range.

The new Dual Coin P.P. mechanism is the acme of simplicity. One operation to the range plate is all that is required to alter from 1d. to 1/- setting, or vice versa.

Ask for a sample of the new 100 c. ft. Dual Coin P.P.

ALDER & MACKAY LTD., EDINBURGH, LONDON & BRANCHES.

PUBLISHERS' NOTICE.

TO CORRESPONDENTS: No notice can be taken of anonymous communications, unless authenticated by the name and address of the writer (not necessarily for publication).

TO ADVERTISERS.

NOON ON TUESDAY is the latest hour for receipt of advertisement copy for the following day's issue.

FIRST POST ON MONDAY is the latest for receipt of alterations of standing advertisements.

RATES FOR UNDISPLAYED ADVERTS: Situations Wanted, Six Lines and under (about 36 words), 3s.; each additional Line, 6d. Situations Vacant, Apparatus Wanted and for Sale, Contracts, Public Notices, &c., 9d. per Line—minimum 4s. 6d. An additional charge of 6d. is made where replies are addressed c/o the "JOURNAL."

Full Schedule of Advertising Rates on application.

TERMS OF SUBSCRIPTION.

United Kingdom and Ireland	Advance Rate	35/- per annum. 18/- per half year.
	Credit Rate	40/- per annum. 21/- per half year.
Dominions and Colonies ...		35/- per annum, in advance.
United States (through United States Agent)		$8.50 per annum, in advance.
Other Countries in the Postal Union.		40/- per annum, in advance.

A copy of the "G.J." Calendar and Directory is presented to Continuous Subscribers.

UNITED STATES.—Renewals after December, 1931, and all new subscriptions in the United States, to be made through ROBERT O. LUQUEER, Agent, WOOLWORTH BUILDING, NEW YORK, N.Y.

WALTER KING, LTD., 11, Bolt Court, Fleet Street, London, E.C. 4.
Telephone: Central 2236-7 (2 lines). Telegrams: "GASKING, FLEET LONDON."

FRESH OXIDE

SPENT OXIDE

GAS PURIFICATION & CHEMICAL COMPANY LIMITED,

PALMERSTON HOUSE,
34, OLD BROAD STREET,
LONDON, E.C. 2.

(ESTABLISHED 1873.)

Telegrams: "PURIFICATION, STOCK, LONDON."
Telephone: LONDON WALL 9144.

J. & J. BRADDOCK (Branch of Meters Limited), Globe Meter Works, OLDHAM, and 45 & 47, Westminster Bridge Road, LONDON, S.E. 1.

WET AND DRY GAS METERS, PREPAYMENT METERS, STATION METERS AND GOVERNORS.

REPAIRS RECEIVE PROMPT ATTENTION.

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FOR Motor Lorries and Railway Traffic can be seen erected at our Works READY FOR DELIVERY. Inspection by your Engineer invited and a test by your Local Inspector of Weights and Measures before delivery. Every machine a High-Class Engineering Product and fully guaranteed.

CHARLES ROSS, LIMITED,
SHEFFIELD.

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Phone: Royal 1484.

"TORTO" FIRE CEMENT.

BALE & CHURCH, LTD.,
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Phone: Royal 1484.

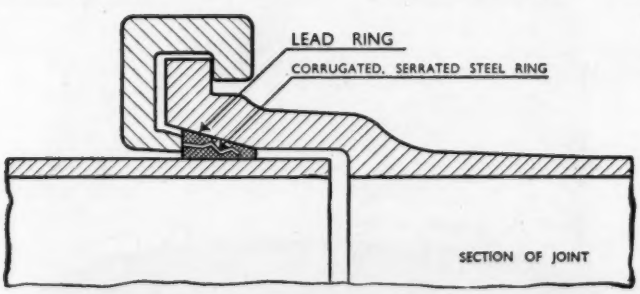
"KLEENOFF," THE COOKER CLEANSER

Tins for Sale to Consumers.
In Bulk for Works Use.
(*See also the "Gas Salesman."*)

BALE & CHURCH, LTD.,
33, ST. MARY-AT-HILL, LONDON, E.C. 3.
Phone: Royal 1484.

The STANTON Mechanical Lead Joint

(Patent applied for)



NO INCREASED COST

This mechanically made joint works on a similar principle to the Stanton-Wilson Joint, but employs a lead ring in which is encased a thin corrugated, serrated steel ring. It is more flexible than a caulked joint and provides for expansion and contraction of mains—No skilled labour needed.

N.B.—Where a considerable degree of flexibility is required, use the Stanton-Wilson self-adjusting Joint, which has been adopted by over 200 Public Undertakings in this country.

The Stanton Ironworks Company Limited, Near Nottingham

ROBERT DEMPSTER & SONS, Ltd., ELLAND, Builders of CARBONIZING PLANTS, both Horizontal and Vertical. Manufacturers of CONDENSERS, PURIFIERS, GASHOLDERS, &c., also every description of COAL and COKE HANDLING PLANT. Telegrams: "DEMPSTER, ELLAND." Telephone: ELLAND 261 (Private Branch Exchange).

FIRTH BLAKELEY, SONS, & CO., LTD.,
Vulcan Ironworks, Church Fenton, Yorks.,
MANUFACTURERS of Gasholders, Tanks, Condensers, Purifiers, Scrubbers, Washers, and every description of Gas Plant.
Telegrams: "BLAKELEYS, CHURCH FENTON." Telephone: BARKSTON ASH 34 (Private Branch Exchange). Code: "BENTLEYS."

STEAM ENGINES FOR GAS WORKS
ASHWORTH & PARKER,
Riverside Works, Bury, Lancs.
(See illustrated advertisement July 5, p. 13.)

THOMAS DUXBURY AND CO.
16, DEANSGATE, MANCHESTER. PALACE CHAMBERS, WESTMINSTER, S.W.1.
FOR
LUX
GAS PURIFYING MATERIAL.

Immediate delivery from STOCKS at:—Grangemouth. Middlesbrough, Goole, London, Poole, Newport and Garston.

Quotations given for forward delivery.

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Telephones	*Telegrams:*
Manchester: Blackfriars 3268 & 3269.	Darwinian, Manchester.
London: Whitehall 6501.	Darwinian Parl, London.

THE BRITISH GAS PURIFYING MATERIALS CO., LTD.,
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Telegrams: "BRIPURIMAT, LEICESTER." Telephone: LEICESTER 59086.

NATURAL BRITISH PURIFYING MATERIAL
AN ABSOLUTELY STANDARD PRODUCT.
MOISTURE GUARANTEED 28%
SUMMER AND WINTER.

"FIRST QUALITY" DUTCH BOG ORE
As supplied to most of the Principal Gas Works in Great Britain.

SPENT OXIDE PURCHASED.

GEORGE WILSON GAS METERS, Ltd. for
GAS-METERS, ORDINARIES, SLOTS, AND REPAIRS
Foleshill Road, COVENTRY.
'Phone: 3655 Coventry. Grams: "GASMETER."
Certus Works, Kingston Road, Raynes Park, LONDON, S.W.20.
Radium Works, 11, Radium Street, Oldham Road, MANCHESTER.
(See advertisement July 19, p. 125.)

PATENTS.

PATENTS for Inventions, Trade Marks "Advice Handbooks" and Consultations free. KING'S PATENT AGENCY LTD., Director B. T. KING, C.I.M.E., Regd. Patent Agent, G.B., U.S., and Can., 146A, QUEEN VICTORIA ST., E.C. 4, and 57, CHANCERY LANE (near Pat. Off.), LONDON, W.C.2. 47 years' refs. 'Phone Cent. 0682.

MEWBURN, ELLIS, & CO.,
CHARTERED PATENT AGENTS AND TRADE MARK AGENTS,
70 & 72, Chancery Lane, London, W.C.2.
Telegrams: "Patent, London." 'Phone: 243 Holborn.
And 3, St. Nicholas Buildings, Newcastle-on-Tyne.

APPOINTMENTS, &c., VACANT.

COUNTY BOROUGH OF WIGAN.

ASSISTANT GAS ENGINEER.

APPLICATIONS are invited for the Position of ASSISTANT GAS ENGINEER at a Salary of £340 per Annum, rising, subject to satisfactory service, by annual increments of £20 to £400 per Annum, subject to certain temporary deductions.

Applicants must possess good Knowledge and Experience of Modern Gas Manufacture and Supply and of Salesmanship.

The appointment will be subject to the Local Government and Other Officers' Superannuation Act, 1922, and the successful candidate will be required to pass a Medical Examination.

Applications (stating Age, Qualifications, Experience present and previous Appointments, and accompanied by *copies* of not more than Three recent Testimonials) must be delivered to the undersigned on or before Wednesday, the 9th August next

WILLIAM HENRY TYRER,
Town Clerk.

Town Clerk's Office,
Municipal Buildings,
Wigan,
July 19, 1933.

SOUTH SUBURBAN GAS COMPANY.

COKE SALESMAN.

APPLICATIONS are invited for the Position of COKE SALESMAN, at a commencing Salary of £400 per Annum.

Preference will be given to applicants under 35 years of age, having connections in the South-Eastern Counties, and a knowledge of the Uses of Coke as a Fuel and of its Preparation for the Market.

Applications should be by letter, stating age, experience, and when available. Copies (not original) Testimonials to be forwarded.

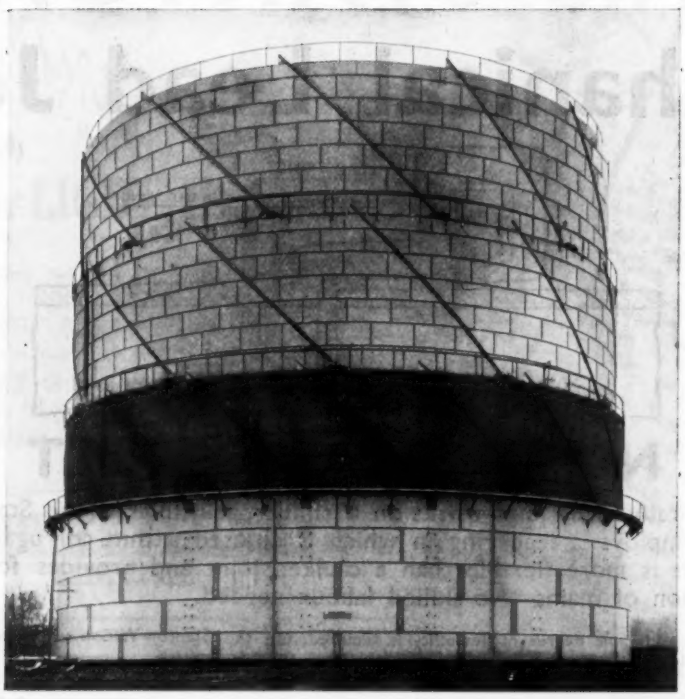
W. WASTELL,
General Manager.

Lower Sydenham,
S.E. 26.

Continued on p. 222.

SAML. CUTLER & SONS LTD

ENQUIRIES INVITED FOR ALL TYPES OF **GAS-HOLDERS**



39, VICTORIA ST., WESTMINSTER, S.W.1
Telephone No.: VICTORIA 8492
Telegraphic Address: RETORTUS, SOWEST, LONDON

PROVIDENCE IRON-WORKS, MILLWALL, E.14
Telephone Nos.: EAST 1734-1735
Telegraphic Address: CUTLER, MILLWALL, LONDON

PROGRESS OF THE "HOLMES" NEW SYSTEM OF BENZOLE RECOVERY AND WASH OIL REGENERATION

Recent orders received from Gas Undertakings

1930

Huddersfield

1931

Brighouse
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Lambton, Hetton & Joicey Colls. Ltd.
Calverley & Horsforth District Gas Co.
Dover
Blackburn
Gas Light & Coke Co., Fulham Works
Plymouth Gas Dept., Devonport

1932

Manchester Corp., Rochdale Road
Lytham & St. Annes
Altrincham
Dewsbury
Tottenham & District Gas Co.
Chesterfield
Ryde
Cradley Heath
Goole
Wakefield
Oldham
Colchester
Ramsgate
Newark-on-Trent
Bilston
Oswaldtwistle
Tottenham & District Gas Co., Ponders End Works
Tottenham & District Gas Co., Hertford Works
Cambridge
Bournemouth
Watford & St. Albans Gas Co.
Plymouth and Stonehouse Gaslight & Coke Co.
Nottingham
Barnsley
Swindon
Gas Light & Coke Co., Brentford Station
Gas Light & Coke Co., Nine Elms Station
Gas Light & Coke Co., Bow Common Station
Padiham
Folkestone
Sheffield
Stretford
Great Yarmouth
Guildford
Brighton
Scarborough
Barnet District Gas & Water Co.
Morley
Liverpool Gas Co., Garston

1933

(*Under Construction*)

Farnham
Douglas
Shanklin & Ventnor Gas Co., Shanklin Works
Portsmouth
Bishop's Stortford, Harlow & Epping Gas & E. Co., Epping Works
Bishop's Stortford, Harlow & Epping Gas & E. Co., Bishop's Stortford Works
Southampton
Tunbridge Wells
Southgate & District Gas Co.
Aylesbury
Dublin
St. Helens
Leeds Corp. Gas Dept., Meadow Lane Works
Bexhill-on-Sea
Stoke-on-Trent
Widnes
Kirkintilloch
Stalybridge

Full information regarding technical details and the financial advantages of this Process will be forwarded on request.

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FOUNDED 1850
HUDDERSFIELD

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Telephone: Huddersfield 1573 (Private Branch Exchange).
London Office: 119 Victoria Street, Westminster, S.W.1. *Telephone:* Victoria 4505.
Telegrams: Holmes, Huddersfield
Telegrams: Ignitor, Sowest, London

C96

APPOINTMENTS, &c., VACANT.
(Continued.)

A QUALIFIED, Trained, and Energetic Lady is required by a South Coast Gas Undertaking as additional Demonstrator of Cookery and Laundry, to Instruct Consumers in their own Homes, and to give occasional Lectures.

Applications, stating Age, Qualifications, Experience with other Gas Appliances, Salary required, accompanied by *copies* of not more than Three Testimonials, to No. 8339, "GAS JOURNAL," 11, BOLT COURT, FLEET STREET, E.C. 4.

DRAUGHTSMAN — Experienced in Carbonization Practice, Retort Setting Work for Horizontals and Verticals. Full particulars of Training, Age, and Salary required.

Address, No. 8344, "GAS JOURNAL," 11, BOLT COURT, FLEET STREET, E.C. 4.

COMPANY NOTICES.

HORNSEY GAS COMPANY.

NOTICE is Hereby Given that the TRANSFER BOOKS relating to the ORDINARY STOCK of this Company WILL BE CLOSED on the 5th August, 1933, and RE-OPENED on the 19th August, 1933.

By order of the Board,
K. LESLIE MORTIMORE,
General Manager and Secretary.

General Manager and Secretary's Office,
Gas-Works,
Hornsey, N. 8,
July 27, 1933.

PLANT &c., FOR SALE & WANTED.

RETORT Chargers. — Two Morris Manual Chargers FOR SALE, in good condition. May be seen working by appointment.

MELTON MOWBRAY GAS LIGHT AND COKE COMPANY, LTD., GAS-WORKS, MELTON MOWBRAY.

GAS-WORKS WANTED.

WANTED to Purchase — Small Gas- Works in Country.

Address, No. 8345, "GAS JOURNAL," 11, BOLT COURT, FLEET STREET, E.C. 4.

TARPAULINS.

TARPAULINS.—Second Hand Black Dressed, approx. 20 ft. by 14 ft., all thoroughly repaired, 25s. each. Redressed ditto, 30s. each. Carriage paid. Approval willingly. Thousands sold with full satisfaction. Cheapest makers new goods. Samples and lists on application.

S. H. LOMAS & CO., HIGH STREET, LONDON, E. 15.

CONTRACTS OPEN.

TAR AND BITUMEN FOR USE ON ROADS.

DEPARTMENT OF LOCAL GOVERNMENT AND PUBLIC HEALTH.

LOCAL AUTHORITIES (COMBINED PURCHASING) ACT, 1925.

THE Minister for Local Government and Public Health hereby gives public notice that he will receive Applications on or before the 19th day of August, 1933, from persons desirous of being appointed under the abovementioned Act to be OFFICIAL CONTRACTORS during the period 1st day of October, 1933, up to the 31st March, 1934, for the supply to Local Authorities in Saorstát Eireann of the commodities set forth in the Schedule hereunder.

Applications for appointment as Official Contractor must be made on the prescribed Form of Application, copies of which can be obtained from the Office of the Department of Local Government and Public Health (TRADE DEPARTMENT), Room 44, Custom House, Dublin, and should be forwarded to this address *enclosed and sealed in the Official Envelope* which is issued for the purpose with the prescribed Form.

Particulars and specifications of each of the commodities set forth in the Schedule hereunder may also be obtained from the above address. The commodities are to be supplied in accordance with conditions set forth in the Local Authorities (Combined Purchasing) Regulations, 1926 to 1933, and in particular in accordance with the Local Authorities (Combined Purchasing) (Supply in Bulk) Regulations, 1933.

Where an applicant proposes to supply a proprietary preparation as a substitute for, or form of, the commodity in respect of which he is desirous of appointment, he must state so in his application. He must also give particulars of the composition of such preparation. Expert opinion will be taken as to the relative value of any such preparation.

The Minister will require every person appointed, as a condition of his appointment, to enter into an undertaking (included in the Application Form) to accept as correct the results of any analysis or test by the State Chemist of the commodity supplied.

Before making an appointment, the Minister will take into consideration not only the price for which the commodity is offered by each applicant, but also the quality of the goods manufactured or supplied by him, the period from the date of each order within which the applicant undertakes to make delivery, the stocks proposed to be held in this country, the records of the applicant, and any other such relevant matter. The Minister does not undertake to appoint the applicant whose price is the lowest or any applicant.

SCHEDULE.

1. Bitumen for Surface Dressing.
2. Bitumen for Asphalt Macadam.
3. Tar No. 1.
4. Tar No. 2.
5. Tar No. 3.
6. Tar Bitumen Mixture.
7. Emulsion of Bitumen and Water.
8. Cut-Back Bitumen (Mixing).
9. Cut-Back Bitumen (Spraying).

By Order of the Minister for Local Government and Public Health.

E. P. MCCARRON,
Secretary.

19th July, 1933.

19/J1841. W. H. & Co.

CITY OF BRADFORD.

TENDER FOR STORES.

THE Gas Committee of the Bradford Corporation are prepared to receive TENDERS for the Supply and Delivery of the following STORES required in their several Departments during the Twelve Months ending September 30th, 1934:

SPECIAL PIPES and CASTINGS.
GENUINE PUDDLED IRON STEAM TUBING and FITTINGS.
WROUGHT IRON and STEEL BARS, PLATES, &c.
COTTON WASTE and SPONGE CLOTHS.
BEST and COMMON ENGINE OIL, GAS ENGINE OIL, CYLINDER OIL, and BROWN GREASE.
TARRED GASKIN.
BOLTS, NUTS, WASHERS, and SET SCREWS.
BRASS MAIN GAS COCKS.
SHEET GLASS and OPAL GLASS (21 oz.) for Street Lamps.

Form of Tender, with any further information required, may be had on application to Mr. Edward Crowther, Gas Engineer, Town Hall, and samples may be seen at Mill Street Gas-Works.

The Contracts will be let subject to the Fair Contracts Clauses of the Corporation.

Tenders, endorsed "Tender for Stores," to be sent to me not later than 9 a.m. on Thursday, 10th August, 1933.

The lowest or any Tender will not necessarily be accepted.

N. L. FLEMING,
Town Clerk.

Town Hall,
Bradford,
July 21, 1933.

CORPORATION OF GLASGOW.

(GAS DEPARTMENT.)

THE Corporation invite Offers for the REMOVAL and REPLACEMENT of a TWO-LIFT GASHOLDER at Dalmarnock Gas-Works, Glasgow.

Specification and Form of Tender can be obtained at the Office of the General Manager, Gas Department, 30, John Street, C. 1.

Sealed Tenders, marked outside "Offer for .....," must be lodged with the subscriber on or before Monday, 14th August, 1933.

The lowest or any Offer may not be accepted.

D. STENHOUSE,
Town Clerk.

City Chambers,
Glasgow,
July 18, 1933.

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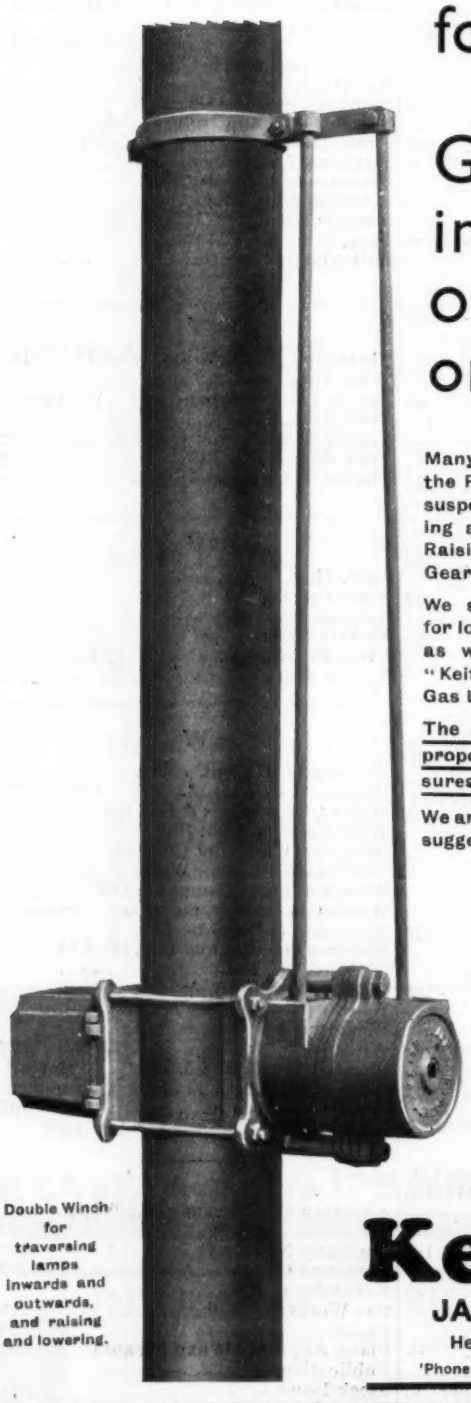

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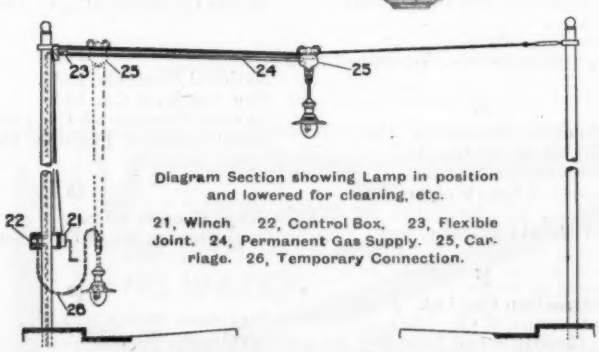

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